VIRGINIA AQUATIC RESOURCES TRUST FUND
ANNUAL REPORT - 2010

March 31, 2011

This document serves as the required annual report of the status and activities of the Virginia Aquatic Resources Trust Fund (Fund) through December 31, 2010. The report includes a summary of the permitted impacts and associated mitigation payments and the projects to mitigate those impacts since the initiation of the Fund. This report updates the 2009 Annual Report and details specific activity conducted by the program in 2010.

The information is divided into the following sections:

- **Executive Summary** – provides a general overview of the information in the report
- **I. Introduction** – provides general information and background about the program and a summary of the status of impacts, mitigation payments, and funds authorized since the initiation of the Fund
- **II. Impacts, Revenues, and Operational Costs** – provides the distribution of impacts and mitigation payments by river basin and resource type and a summary of other revenues and operational costs
- **III. Summary of 2010 Impact and Mitigation Payments, Project Proposals, and Funding Authorizations** – provides a summary of the impact and mitigation payments, proposed projects, and funds authorized during 2010
- **IV. Mitigation Overview** – provides information concerning mitigation goals and general procedures
- **V. Mitigation Projects** – provides details of the mitigation projects for which funds have been proposed and authorized in 2010, updates information on projects funded prior to 2010, and identifies future goals and needs of the Fund
- **Attachment A**. Approved Project Table
- **Attachment B**. Map of Project Locations within River Basins
- **Attachment C**. Approved Project Summaries within River Basins
- **Attachment D**. Map of Northwest River Conservation Corridor
- **Attachment E**. Map of Dragon Run Conservation Corridor

Executive Summary

The Virginia Aquatic Resources Trust Fund (Fund) is administered in partnership by The Nature Conservancy of Virginia (the Conservancy) and the Norfolk District United States Army Corps of Engineers (Corps) to provide compensatory mitigation for permitted wetland and stream impacts in Virginia through an in-lieu-fee (ILF) agreement. The Fund provides one option for a permit applicant to address compensatory mitigation requirements associated with Section 404 and 401/Virginia Water Protection permits issued by the Corps and the Virginia Department of Environmental Quality (DEQ), respectively. By consolidating the mitigation requirements of multiple small projects, the Fund is able to implement larger-scale watershed efforts that restore, enhance, and protect water quality. The Fund attempts to maximize the ecological benefits of compensatory mitigation by locating mitigation projects in identified conservation priority areas within each watershed. For instance, many of the Fund's mitigation projects have been integrated into areas identified by the Conservancy's overall Conservation by Design strategy as important to protect the rare plants, animals, and natural communities of Virginia.

A primary goal of the Fund is to ensure a "no net loss" of acreage, functions, and values for compensatory mitigation completed for impacts to aquatic resources of the same type and within the same watershed as the impacts. This watershed approach is implemented through the completion of projects located in the same major river basin as the impacts. The 14 major river basins are the Atlantic Ocean, Big Sandy River, Chesapeake Bay, Chowan River, Lower James River, Middle James River, Upper James River, New River, Potomac River, Rappahannock River, Roanoke River, Shenandoah River, Tennessee River, and York River. Each basin is composed of the 8-digit hydrologic unit codes (HUC) with the exception that the Chesapeake Bay HUC's and Atlantic Ocean HUC are separated for the purposes of the Fund reporting.

The following summary is intended to provide general information about the Fund. The areas of focus include impacts and finances, non-tidal wetland summary, tidal wetland summary, and stream summary. Much of the information is provided in a tabular format for ease in review. The information is provided on a program-wide level and by major river basin for each resource type. Although condensing the Fund's activities into programmatic categories may be informative, it is important to note that the Fund seeks to provide the appropriate compensatory mitigation for each aquatic resource within each river basin. , Detailed information about impacts, mitigation funds, authorized funds, and compensatory mitigation for each basin is contained in the full report.

From 1995 through December 31, 2010, the Fund was used to mitigate for non-tidal wetland, tidal wetland, and stream impacts in the fourteen major river basins in Virginia. These impacts have generated $55,091,900 in mitigation payments as summarized in Table 1. From these mitigation payments, the Corps has authorized $39,666,500 for the Conservancy to complete activities on 112 potential mitigation projects. The Conservancy is actively pursuing mitigation activities on 94 of these sites in twelve of the major river basins. In addition to the mitigation payments and authorized funds to complete mitigation projects, as of December 31, 2010, the Fund has generated $4,705,800 in interest, and has incurred total authorized costs of $4,238,500 to fund staff positions, general equipment, and overhead and bank fee charges.

Table 1: Summary of Impacts, Mitigation Payments, and Funds Authorized from 1995-2010			
Resource Type	**Impacts (acres)**	**Mitigation Payments ($)**	**Authorized Funds ($)**
Non-tidal Wetland	246.68	20,999,100	15,530,900
Tidal Wetland	2.63	635,800	693,000
Total	**249.31**	**21,634,900**	**16,223,900**
Resource Type	**Impacts (lf)**	**Mitigation Payments ($)**	**Authorized Funds ($)**
Stream (pre-USM)	167,690	25,313,000	22,649,000
Stream (USM)	20,082	8,144,100	793,600
Total	**187,772**	**33,457,100**	**23,442,600**
Grand Total		**55,092,000**	**39,666,500**

The following table summarizes the achievements of the Fund through 2010, indicating the amount of impacts by resource type and the total acres of wetlands and linear feet of streams restored and protected.

Table 2: Program-wide Leverage through 2010				
Resource Type	**Impacts**	**Restored**	**Preserved**	**Total Protected**
Non-tidal Wetland (ac)	246.7	485	4,027	4,512
Tidal Wetland (ac)	2.63	28.8	536	565
Stream (lf)	187,772	49,355	688,512	737,867
Upland/Riparian Buffer (ac)	N/A	336	5,581	5,917
Additional Protected (ac)	N/A	N/A	10,499	10,499
Total (acres)	**249**	**850**	**20,643**	**21,493**
Total (linear feet)	**187,772**	**49,355**	**688,512**	**737,867**

Table 3 details the number of payments made to the Fund each year for each resource type since its inception in 1995.

Table 3: Summary of Payments into the Fund				
Year	**Non-tidal Wetland**	**Tidal Wetland**	**Stream**	**Total Payments**
1995	2	0	0	2
1996	13	3	0	16
1997	16	6	0	22
1998	21	4	0	25
1999	22	13	0	35
2000	31	4	0	35
2001	54	4	6	64
2002	88	8	3	99
2003	88	5	3	96
2004	57	5	57	119
2005	48	2	88	138
2006	43	6	87	136
2007	31	0	42	73
2008	20	1	28	49
2009	14	0	10	24
2010	18	1	14	33
Total	**566**	**62**	**338**	**966**

In 2010, the Conservancy requested funding to complete various mitigation activities, associated with 4 new projects and 5 previously approved projects. These projects included mitigation opportunities for non-tidal and tidal wetlands and streams across 6of the 13 major river basins. The Corps and DEQ with input from the US Fish and Wildlife Service (FWS), National Oceanic and Atmospheric Administration (NOAA) and the US Environmental Protection Agency (EPA), reviewed the proposals and projected budgets, and approved all of these proposals.

The 112 projects approved since program inception are in various stages of completion. Table 4 summarizes the progress of all projects to date. For example, a significant number of projects were approved during 2006 through 2008. Several of these projects are pending the closure of land deals or easements, require delineations or surface water assessments, or are in the initial planning stages for restoration or enhancement activities. Therefore, acreages, linear footages, and funding values included in this report are often estimates and may require clarification in future reports.

Table 4: Status of Approved Projects					
Project Status	**Non-Tidal Wetland**	**Tidal Wetland**	**Stream**	**Multiple Resource**	**Total Number**
Active Project Development	2	0	3	4	9
Acquired/Protected	4	1	2	4	11
Construction Planned 2011	7	0	9	0	16
Constructed/Monitoring	12	3	4	6	25
Closed/Mitigation	15	3	9	7	34
Closed without Mitigation	5	0	7	3	15
Inactive, pending closure	0	0	1	1	2
Total	45	7	35	25	112
Active Project Development - currently in negotiations with landowner and/or developing restoration plans					
Acquired/Protected - preservation only projects with land protection deal completed; delineation required to close					
Construction Planned 2011 - restoration plans complete or underway for 2011 implementation of mitigation activities					
Constructed/Monitoring - restoration activities are complete, project in monitoring phase (up to 10 years)					
Closed/Mitigation - project has been officially closed and mitigation credit assigned					
Closed w/o Mitigation - project has been officially closed and did not provide any mitigation credit (appraisal, feasibility, project withdrawn)					
Inactive, pending closure - project is no longer moving forward and will be closed w/o credit					

Table 5 summarizes the funds authorized by the Corps according to resource type and major river basin. All major river basins in Virginia have had funds authorized for expenditure on mitigation projects, except for the Big Sandy River and New River basins.

Table 5: Annual Authorized Funds Per Resource Type					
	Funds Authorized				
Year	**Non-Tidal Wetland Projects ($)**	**Tidal Wetland Projects ($)**	**Stream Projects ($)**	**Total ($)**	**Cumulative Total ($)**
1995	37,000	0	0	37,000	**37,000**
1996	0	0	0	0	**37,000**
1997	167,100	10,000	7,000	184,100	**221,100**
1998	340,000	0	0	340,000	**561,100**
1999	143,200	0	0	143,200	**704,300**
2000	521,300	1,700	0	523,000	**1,227,300**
2001	936,700	10,000	15,000	961,700	**2,189,000**
2002	1,250,000	90,700	101,600	1,442,300	**3,631,300**
2003	510,800	40,000	1,545,800	2,096,600	**5,727,900**
2004	1,366,300	25,300	137,600	1,529,200	**7,257,100**
2005	206,900	206,500	474,000	887,400	**8,144,500**
2006	2,522,800	9,000	6,334,300	8,866,100	**17,010,600**
2007	1,130,400	6,300	6,546,100	7,682,800	**24,693,400**
2008	4,322,600	135,400	6,797,500	11,255,500	**35,948,900**
2009	665,800	113,300	812,300	1,591,400	**37,540,300**
2010	1,410,000	45,000	671,500	2,126,500	**39,666,800**
Grand Totals	**15,530,900**	**693,200**	**23,442,700**	**39,666,800**	

Non-Tidal Wetland Summary

The following tables 6, 7 & 8 provide summary information of Fund activity relating to non-tidal wetlands from 1995 through 2010. Table 6 details the total impacts (acres), mitigation payments, authorized funds, remaining balance of available funds, and the mitigation liability (credits) for non-tidal wetlands. Table 7 details the mitigation activities being pursued (acres), and the associated proposed credits for non-tidal wetlands. Table 8 provides a summary of the non-tidal wetland impacts (acres), the associated credit liability, the proposed wetland mitigation credits, mitigation acres, and additional protected acres for each major river basin.

Table 6: Non-Tidal Wetland Impact and Financial Summary

Impacts (ac)	Mitigation Payments ($)	Authorized Funds ($)	Remaining Balance ($)	Mitigation Liability (credits)
246.7	20,999,100	15,530,900	5,468,200	441.7

Table 7: Non-Tidal Wetland Mitigation Activity Summary

Non-Tidal Wetland Mitigation Activities (ac)					Sum of Mitigation (ac)	Sum of Mitigation Credits
Wetland Restoration	Wetland Enhancement	Wetlands Preservation	Upland Restoration	Upland Preservation		
485	24	4,027	336	1,321	6,193	969

Table 8: Non-Tidal Mitigation Summary Based on Major River Basin

Basin	Impact (ac)	Mitigation Liability (credits)	Proposed Mitigation (credits)	Mitigation Successful or Construction (credits)	Credit Balance (Credits)	Proposed Mitigation (ac)	Additional Protected Acreage
Atlantic Ocean	1.28	2.1	0	0	-2.1	0	0
Big Sandy River	0.11	0.15	0	0	-0.15	0	0
Chesapeake Bay	46.62	88.28	160.56	117.27	72.28	1453	630
Chowan River	41.71	76.47	312.7	267.3	236.23	1726	11
Lower James River	70.34	132.69	260.6	212	127.91	1325	794
Middle James River	20.45	37.4	28.12	28.12	-9.28	160	499
Upper James River	3.31	5.29	4.2	4.2	-1.09	14	0
New River	1.62	1.67	0	0	-1.67	0	0
Potomac River	8.78	13.64	79.51	79.51	65.87	812	0
Rappahannock River	10.21	19.28	52	27	32.72	168	301
Roanoke River	5.65	9.6	5.12	0	-4.48	14	0
Shenandoah River	9.08	11.35	11.7	1.1	0.35	29	0
Tennessee River	18.47	26.52	25.71	1.44	-0.81	61	0
York River	9.07	17.24	37.31	37.31	20.07	431	186
Total	**246.70**	**441.68**	**977.53**	**775.25**	**535.85**	**6,193**	**2,421**

Though impacts have occurred in all 14 major river basins (Table 8), historically, the majority of non-tidal wetland impacts (greater than 20 acres) and payments have accumulated in the following basins: Chesapeake Bay, Chowan, Lower James, and Middle James River basins. Moderate impacts and mitigation payments have accumulated in the Potomac, Rappahannock, York, Shenandoah, and Tennessee River basins. Relatively few impacts (less than 6 acres) and associated payments have been received in the Atlantic Ocean, Big Sandy, Upper James, New, and Roanoke River basins. Approximately three quarters of all impacts were to palustrine forested wetlands, with the remaining quarter split among emergent and shrub-scrub wetland types.

Table 9 summarizes the non-tidal wetland restoration projects that are currently in the planning/acquisition phase of the project. Several of these are in design, under contract and expected to be constructed in 2011. Non-tidal wetland mitigation requirements are largely addressed by mitigation projects in key basins with the greatest impacts such as the Lower James River, Chowan River, Rappahannock River, Potomac River and Chesapeake Bay basins, as summarized in Table 10. Additionally, projects in planning and design stages address the liability in basins such as Chesapeake Bay, Tennessee River, and Shenandoah River basins.

Table 9: Summary of Proposed Non-Tidal Wetland Restoration Sites through 2010

Site ID	Name	Basin	Restoration Planned (Acres)	Upland Buffer (Acres)	Enhancement (Acres)	Proposed Credits
CB-17	Dameron Marsh/Hughlett Point/Fleet Bay (Thompson, W.)	CB	5.2	0	0	15.85
CB-19	Dragon Run (Carlson)	CB	3	12	0	3.8
CH-13	Northwest River (SP Forests, LLC)	CH	27.5	0	0	27.5
LJ-7	Great Dismal Swamp NW Section (Jacobson)	LJ	30	24	2.5	32.43
RP-13	Rappahannock River site	RP	23	19	0	24.27
SH-4	Shenandoah Mtn/Cow Knob site	SH	10	6	0	10.4
TN-6	Rich Mountain site	TN	0	0	7.9	2.61
TN-8	North Fork Holston River site	TN	19.8	11.1	1	24.27
Total			**118.5**	**72.1**	**10.4**	**141.13**

Table 9: Summary of Constructed Non-Tidal Wetland Restoration Sites Through 2010						
Site ID	Name	Basin	Restoration Constructed (Acres)	Upland Buffer (Acres)	Enhancement (Acres)	Proposed Credits
CB-1	Dameron Marsh (Smith 1)	CB	18.71	18.71	0	21.33
CB-10	East River (Brooks/Ober)	CB	12.5	2.73	0	14.18
CH-3	Dismal Swamp (Bruff)	CH	2.66	7.6	0	3.17
CH-5	Northwest River (Benefits)	CH	12	0	0	82.75
CH-6	Northwest River (Hall)	CH	25	2	0	25.32
CH-7	Nawney Creek (Knight)	CH	6.6	11.4	0	7.36
CH-8	Northwest River (Su)	CH	5.05	47.95	0	15.92
CH-9 /LJ-4	Northwest River (Stephens)	CH	65	6	0	76.75
CH-10	Northwest River (Powers)	CH	11.15	3.87	0	24.13
CH-11	Nawney Creek (Fentress)	CH	9.29	13.5	0	10.19
LJ-1	Chickahominy River (Walters)	LJ	16.66	23	0	39.63
LJ-4 /CH-9	Northwest River (Stephens)	LJ	65	6	0	76.75
LJ-10	James River (VCU)	LJ	50	0	0	50
MJ-1	Rivanna River (Lamb)	MJ	16.2	43.8	0	19.12
PO-1	Caledon (Nash)	PO	9.31	27.07	0	19.43
PO-5	Goose Creek (Bluewildlife)	PO	4.71	0	1.41	6.12
RO-3	Goose Creek (Bedford County)	RO	4.15	4.67	1.16	5.12
RP-11	Mountain Run (EBX)	RP	17.25	5.5	0.82	18.47
RP-12	Rappahannock River (Norman's Ford – Craig)	RP	2.92	0	0	2.92
TN-3	Barns Chapel (Atwell)	TN	0	0	4.01	1.34
UJ-1	Warm Springs Mountain / Cowpasture River (Phillips)	UJ	3.09	3.91	1.78	3.94
YK-2	Mattaponi River (Gwathmey)	YK	6.45	135.55	4	19.96
YK-5	Cumberland Marsh (Healthvest, Inc.)	YK	0.38	0	0	0.38
YK-7	Mattaponi River (Gwathmey 3)	YK	1.74	2.01	0	1.87
Total			**365.82**	**365.27**	**13.18**	**546.15**

In total, at the end of 2010, the Fund has constructed over 360 acres of wetlands and has proposed to construct another 115 acres, beginning in 2011. In addition, 13 acres of wetlands have been enhanced through Fund activity and over 350 acres of upland buffer have been restored.

Tidal Wetland Summary

Tables 11, 12 and 13 provide summary information of Fund activity relating to tidal wetlands from 1995 through 2010. Table 11 provides the total impacts (acres), mitigation payments, authorized funds, the remaining balance of available funds, and the mitigation liability (credits) for tidal impacts. Table 12 summarizes the mitigation activities being pursued (acres), and the associated proposed credits for tidal wetlands on a program-wide basis. Table 13 provides a summary of the tidal wetland impacts (acres), and the associated credit liability, the proposed wetland mitigation credits, mitigation acres, and additional protected acres for each major river basin.

Table 11: Tidal Wetland Impact and Financial Summary

Impact (ac)	Mitigation Payments ($)	Authorized Funds ($)	Remaining Balance ($)	Mitigation Liability (Credits)
2.63	635,800	692,700	-56,900	2.63

Table 12: Tidal Wetland Mitigation Activity Summary

Tidal Wetland Mitigation Activities (ac)					Sum of Mitigation (ac)	Sum of Mitigation (credits)
Wetland Restoration	SAV Restoration	Oyster Restoration	Tidal Enhancement	Tidal Preservation		
28.8	20	3.34	220	316	564	68.7

Table 13: Tidal Mitigation Activity Summary Based on Major River Basin

Basin	Impact (ac)	Mitigation Liability (credits)	Proposed Mitigation (credits)	Mitigation Successful or Construction (credits)	Credit Balance (credits)	Proposed Mitigation (ac)
Atlantic Ocean	1.01	1.01	4.6	4.6	3.59	23
Chesapeake Bay	1.07	1.07	32.38	14.98	31.31	244
Chowan River	0.01	0.01	1.4	1.4	1.39	70
Lower James River	0.43	0.43	16.1	16.1	15.67	27
Potomac River	0.11	0.11	9.71	9.71	9.6	117
Rappahannock River	0	0	1.6	1.6	1.6	80
York River	0	0	2.96	2.96	2.96	2.96
Total	**2.63**	**2.63**	**68.75**	**51.35**	**66.12**	**563.96**

Through the end of 2010, tidal impacts have been paid into the Fund from all tidally influenced basins except the Rappahannock and York River basins (Table 13). Tidal impacts paid into the Fund are generally very small. Most tidal impacts have occurred in the Atlantic Ocean and Chesapeake Bay basins (1 acre each), accounting for three quarters of all tidal impacts amassed by the Fund. The majority of tidal wetland impacts occurred to estuarine emergent (e.g. salt-marsh) wetlands although open water/unconsolidated bottom impacts account for roughly a third of the impacted acres.

A number of projects with tidal mitigation components have been approved through the Fund, including four that involve innovative restoration efforts (SAV restoration and oyster reef restoration). Several projects have been approved that provide substantial tidal restoration and enhancement potential. Additionally two restoration projects (YK-5 and LJ-10) were constructed in 2010 and will provide significant tidal restoration acreage as success criteria are met in the upcoming years.

Stream Summary

Tables 14, 15 and 16 provide summary information of the Fund activities for streams from 1995 through 2010. Table 14 provides a summary of the total linear feet of impacts and associated funding information for streams on a program-wide basis. Table 15 details the total linear footage of each mitigation activity the Fund is pursuing on a program-wide basis. For a broad overview of Fund activity, mitigation activities are divided into the following four general categories: channel restoration / enhancement (projects may include riparian buffer planting); riparian buffer planting (projects do not have channel or bank work); livestock exclusion; and stream and/or riparian buffer preservation. Table 16 summarizes the total impact length, linear footage of each mitigation activity, total channel length in the mitigation area, stream mitigation acreage, and the additional protected acreage for the approved stream projects for each major river basin.

As noted in tables 15 and 16, multiple mitigation activities are completed along the same channel length for several projects. For example, riparian buffer planting and livestock exclusion activities are conducted along the same 2,000 linear foot length of stream channel for a project in the Rappahannock River Basin. Table 16 identifies these areas of multiple mitigation activities. Detailed descriptions of the mitigation activities (with associated buffer widths, as appropriate) for each project are included in the report.

Table 14: Stream Impact and Financial Summary

Type	Impact (lf)	Mitigation Payments ($)	Authorized Funds ($)	Remaining Balance ($)
Pre-USM	167,700	25,313,000	22,649,000	2,664,000
USM	20,100	8,144,100	793,600	7,350,500
Total	**187,800**	**33,457,100**	**23,442,600**	**10,014,500**

Table 15: Stream Mitigation Activity Summary					
	Stream Mitigation Activity (lf)				
Type	Channel Restoration / Enhancement (may include buffer planting)	Riparian Buffer Planting (no channel or bank work)	Livestock Exclusion	Stream and/or Riparian Buffer Preservation	Total Channel Length in Mitigation Area (lf)
Pre-USM	47,863	15,680	23,799	618,146	686,051
USM	1,492	1,903	0	48,631	51,816
Total	**49,355**	**17,583**	**23,799**	**666,777**	**737,867**

For several projects, multiple mitigation activities are completed along the same channel length (e.g. Riparian Buffer Planting and Livestock Exclusion)

Through the end of 2010, the Fund has been used to mitigate for impacts to streams in all basins (Table 16) except for the Atlantic Ocean and the Upper James River basins. The majority of stream impacts utilizing the Fund for mitigation have occurred in the Potomac River basin, which has accrued over 75,000 linear feet of impacts. Additional basins with high impacts include the Middle James River, Lower James River, Shenandoah River, and Rappahannock River basins. The Fund has been used to mitigate for relatively few impacts (less than 8,000 lf) in the Chesapeake Bay, Chowan River, New River, Roanoke River, Tennessee River and York River basins. Appropriately, the Conservancy has focused on the basins with greatest impacts to identify and propose stream mitigation projects. Projects have been identified and approved in all of the basins with greatest mitigation need. Additional projects are needed in basins such as the Lower James River and the New River and will be a focus for efforts in 2011.

Table 16: Stream Mitigation Activity Summary Based on Major River Basin

Basin	Impact (lf)	Proposed Stream Mitigation Activity (lf)				Total Channel Length in Mitigation Area (lf)	Total Completed Mitigation	Stream Mitigation Area (ac)	Additional Protected Acreage (ac)
		Channel Restoration / Enhancement (may include buffer planting)	Riparian Buffer Planting (no channel or bank work)	Livestock Exclusion	Stream and/or Riparian Buffer Preservation				
Atlantic Ocean	0	0	0	0	0	0	0	0	0
Big Sandy	3,006	0	0	0	0	0	0	0	0
Chesapeake Bay	1,399	0	0	0	41,872	41,872	19,372	118	NTW
Chowan River	2,173	0	0	0	16,350	16,350	6,460	85	278
Lower James River	22,983	8,104	0	0	15,541	23,645	11,054	119	NTW
Middle James River	33,288	14,791	6,000	0	42,187	60,478	51,426	587	59
Upper James River	0	0	0	0	7,609	7,609	7,609	104	0
New River	3,241	0	0	0	0	0	0	0	0
Potomac River	76,813	17,055	0	8,477	110,342	127,947	119,085	607	1,560
Rappahannock River	15,862	0	2,000	7,742	308,197	315,939	312,039	1,314	2,979
Roanoke River	7,562	3,215	800	0	20,708	23,923	6,008	172	420
Shenandoah River	14,797	4,103	1,700	0	33,742	39,545	38,026	526	1,180
Tennessee River	5,359	1,580	1,580	7,580	51,451	53,031	10,781	397	1470
York River	1,289	2,200	3,600	0	21,728	27,528	978	231	133
Total	**187,772**	**51,048**	**15,680**	**23,799**	**669,727**	**737,867**	**582,838**	**4,260**	**8,078**

Linear footages and acreages included in this table include estimates which may be changed in future reports, as the projects are in various phases of completion. Mitigation Area refers to linear footage and/or acreage included under a "no-touch" buffer

lf - linear feet | ac - acre

NTW - Additional Protected Acreage reported under non-tidal wetland summary

1 - For several projects, multiple mitigation activities are completed along the same channel length (e.g. Riparian Buffer Planting and Livestock Exclusion)

2 - The Rappahannock River Fish Passage project is not included in the table

Additional Protected Acreage refers to acreage included under the protective instrument placed on the property by the program which does not qualify for mitigation due to specified allowable activities (e.g. silviculture, agriculture)

Returned Funds

Table 17 details the allocated funds that have been unallocated and/or returned to the general balance of the Fund. Following closure of forty-nine projects, $1,295,700 was unallocated. Land sales associated with ten projects returned $2,328,800 to the Fund. In total, $3,624,500 of authorized funds has been returned to the general Fund balance.

Table 17: Summary of Allocated Funds Returned to General Fund Balance or Unallocated through 2010

Number of Projects	Amount Approved ($)	Balance Returned or Unallocated ($)	Reason for Return
42	8,570,500	1,295,700	Project Closure
10	3,711,100	2,328,800	Land Transfers
52	**12,281,600**	**3,624,500**	**Total**

Conservancy Focus

In addition to the compensatory mitigation provided by the approved wetland and stream projects, many of the projects greatly contribute to the protection of Virginia's rare plants, animals, and natural communities. Utilizing Conservation by Design, mitigation sites are often located within a conservation framework that provides greater ecological benefit than would an isolated project with the same mitigation activities. The projects are often part of an on-going conservation initiative with comprehensive ecological management plans. The large size of many of the projects (including both the mitigation areas and additional protected acreage) provide significant habitat for wildlife that depend upon large, contiguous forest blocks while providing additional buffering protection for aquatic resources. These projects may also provide corridors to connect preserved properties or surround and buffer a critical area.

Many of the project sites are listed habitat sites for state and/or federal threatened or endangered species and have documented occurrences of the Virginia Department of Conservation and Recreation Natural Heritage Elements. In addition, the projects often provide direct and indirect improvements to impaired systems, such as total maximum daily load (TMDL) listed streams, or added protection to large or significant resource systems, including the Clinch River, Great Dismal Swamp, and the Chesapeake Bay watershed. Several sites also have significant historic or cultural resource preservation benefits or protect unique natural features.

Table 18 is a compiled listing of the rare species, natural communities, and unique natural features that could potentially benefit from the approved mitigation projects of the Fund, through water quality improvement, habitat protection, feeding and nursery habitat protection, and direct enhancement or restoration of the resource. This list was developed utilizing existing conservation planning information as well as other data.

Table 18: Conservation Targets

Common Name / Community	*Scientific Name*	Federal/State Rankings
Virginia stonefly	*Acroneuria kosztarabi*	G1/S1
northern saw-whet owl	*Aegolius acadicus*	G5/S1B,S1N
sensitive joint vetch	*Aeschynomone virginica*	G2/S2
dwarf wedgemussel	*Alasmidonta heterodon*	G1,G2/S1
elktoe	*Alasmidonta marginata*	G4/S1,S2
western sand darter	*Ammocrypta clara*	G3

Common Name / Community	***Scientific Name***	**Federal/State Rankings**
pearly everlasting	*Anaphalis margaritacea*	G5/S1
hairy rockcress	*Arabis hirsuta var. adpressipilis*	G5T4Q/S1S2
Elliott's aster	*Aster puniceus elliottii*	G5T34/S1
tropical water-hyssop	*Bacopa innominata*	G3,G5/S2
upland sandpiper	*Bartramia longicauda*	G5/S1B
aster-like boltonia	*Boltonia asteroides*	G5/S3
Carolina boltonia	*Boltonia caroliniana*	G4/S2
blue-hearts	*Buchnera americana*	G5/S1S2
Carolina fanwort	*Cabomba caroliniana*	G3G5/S1
Price's cave isopod	*Caecidotea pricei*	G3G4/S2S3
hoary elfin	*Callophrys polios*	S1S3
mountain bittercress	*Cardamine clematitis*	G2G3
crawe sedge	*Carex crawei*	G5/S2
epiphytic sedge	*Carex decomposita*	G3/S2
a sedge	*Carex striata*	G4/S2
purple finch	*Carpodacus purpureus*	G5/S1B,S5N
hermit thrush	*Catharus guttatus*	G5/S1B,S5N
Atlantic white cedar	*Chamaecyparis thyoides*	G4/S2
northeastern beach tiger beetle	*Cicindela dorsalis ssp. dorsalis*	Threatened
northern harrier	*Circus cyaneus*	G5/S1S2B,S3N
sawgrass	*Cladium mariscus var. jamaicense*	G5T5/S1
spreading pogonia	*Cleistes divaricata*	G4/S1
bunchberry	*Cornus Canadensis*	G5/S1
Virginia big-eared bat	*Corynorhinus townsendii virginianus*	G4T2/S1
Potomac sculpin	*Cottus bairdi*	Potomac and James restricted
timber rattlesnake	*Crotalus horridus*	G4TUQ/S1
canebrake rattlesnake (coastal plain population)	*Crotalus horridus*	G4TUQ/S1
eastern hellbender	*Cryptobranchus alleganiensis*	G3G4/ S2S3
spectaclecase	*Cumberlandia monodonta*	G3/S1
button-bush dodder	*Cuscuta cephalanthi*	G5/S1
pretty dodder	*Cuscuta indecora*	G5/S2
steelcolor shiner	*Cyprinella whipplei*	G5/S1
showy lady's slipper	*Cypripedium reginae*	G4/S1
magnolia warbler	*Dendroica magnolia*	G5/S2B
showy tick-trefoil	*Desmodium canadennse*	G5/S1S2
dromedary pearlymussel	*Dromus dromas*	G1
beaked spikerush	*Eleocharis rostellata*	G5/S3
yellow lance	*Elliptio lanceolata*	G2G3/S2S3
alder flycatcher	*Empidonax alnorum*	G5/S1B
big bluet	*Enallagma durum*	G5/S3
Cumberland combshell	*Epioblasma brevidens*	G1
oyster mussel	*Epioblasma capsaeformis*	G1/S1
Parker's pipewort	*Eriocaulon parkeri*	G3/S2
bluebreast darter	*Etheostoma camurum*	G4/S2
ashy darter	*Etheostoma cinereum*	G2G3/S1
longfin darter	*Etheostoma longimanum*	James River endemic
riverweed darter	*Etheostoma podostemone*	G4

Common Name / Community	***Scientific Name***	**Federal/State Rankings**
wounded darter	*Etheostoma vulneratum*	G3/S2S3
scarce swamp skipper	*Euphyes dukesi*	G3/S2
American peregrine falcon	*Falco peregrinus anatum*	State threatened, DM
Appalachian springsnail	*Fontigens bottimeri*	G2/S1S2/SE
Tennessee pigtoe	*Fusconaia barnesiana*	G2G3/S2S3
shiny pigtoe	*Fusconaia cor*	G1/S1
fine-rayed pigtoe	*Fusconaia cuneolus*	G1/S1
finerayed pigtoe	*Fusconaia cuneolus*	G1/S1
Atlantic pigtoe	*Fusconaia masoni*	G2/S2
agueweed	*Gentianella quinquefolia spp occidentalis*	G5T4T5/S1
wood turtle	*Glyptemys insculpta*	G4/S2
American bald eagle	*Haliaeetus leucocephalus*	G5/S2S3
cracking pearlymussel	*Hemistena lata*	G1/S1
fox-tail barley	*Hordeum Jubatum*	G1/S1
canada bluets	*Houstonia canadensis*	G4G5
Roanoke hogsucker	*Hypentelium roanokense*	G5
mountain brook lamprey	*Ichthyomyzon greeleyi*	G3,G4/S2
spiny riversnail	*Io fluvialis*	G2/S2
small whorled pogonia	*Isotria medeoloides*	G2/S2
least bittern	*Ixobrychus exilis*	G5/S2
jointed rush	*Juncus articulatus*	G5/S2
small-headed rush	*Juncus Brachycephalus*	G5/S2
narrow-panicled rush	*Juncus* brevicaudatus	G5/S2
big-head rush	*Juncus megacephalus*	G4G5/S2
sheep-laurel	*Kalmia angustifolia*	G5/S3
yellow lampmussel	*Lampsilis cariosa*	G3G4/S2
eastern lampmussel	*Lampsilis radiata*	G5/S2S3
loggerhead shrike	*Lanius ludovicianus*	G4/S2B,S3N
Tennessee heelsplitter	*Lasmigona holstonia*	G3/S1
green floater	*Lasmigona subviridis*	G3/S2
birdwing pearly mussel	*Lemiox rimosus*	G1/S1
Kemp's Ridley sea turtle	*Lepidochelys kempii*	Endangered
fragile papershell	*Leptodea fragilis*	G5/S1
onyx rocksnail	*Leptoxis praerosa*	G5/S1,S3
slabside pearlmussel	*Lexingtonia dolabelloides*	G2/S2
Virginia pigtoe	*Lexingtonia subplana*	G1/S1
black sandshell	*Ligumia recta*	G5/S2
Carolina lilaepsis	*Lilaeopsis carolinensis*	G3/S1,S2
Swainson's warbler	*Limnothlypis swainsonii*	G4/S2B,S3N
elongated lobelia	*Lobelia elongata*	G4,G5/S1
winged seedbox	*Ludwigia alata*	G3G4/S1
river redhorse	*Moxostoma carinatum*	G4/S2S3
eastern small-footed myotis	*Myotis leibii*	G3/S1
popeye shiner	*Notropis ariommus*	G3/S2S3
emerald shiner	*Notropis atherinoides*	G5/S1S2
roughhead shiner	*Notropis semperasper*	James River endemic
mirror shiner	*Notropis spectrunculus*	G4/S2

Common Name / Community	***Scientific Name***	**Federal/State Rankings**
yellowfin madtom	*Noturus flavipinnis*	G1/S1
stonecat	*Noturus flavus*	G5/S2
orangefin madtom	*Noturus gilberti*	G2
eastern glass lizard	*Ophisaurus ventralis*	G5/S1
large-leaved grass of Parnassus	*Parnassia grandifolia*	G3G4/S2
joint paspalum	*Paspalum distichum*	G5/S1
blotchside logperch	*Percina burtoni*	G2G3/S1
channel darter	*Percina copelandi*	G4/S2
longhead darter	*Percina macrocephala*	G3/S1S2
stripeback darter	*Percina notogramma*	James River endemic
Roanoke logperch	*Percina rex*	G1, G2, LE
caddisfly	*Phylocentropus carolinus*	G5
slender-leaved dragon-head	*Physostegia leptophylla*	G4G5/S2
Peaks of Otter salamander	*Plethodon hubrichti*	G2/S2
James River spiny mussel	*Pleurobema collina*	G1
Tennessee clubshell	*Pleurobema oviforme*	G2G3/S2S3
pyramid pigtoe	*Pleurobema rubrum*	G2G3/S1
a bluegrass	*Poa saltuensis*	G5/S2
rare skipper	*Problema bulenta*	G2G3/S1 SOC
thin-necked cave beetle	*Pseudanophthalmus parvicollis*	G1S1
fluted kidneyshell	*Ptychobranchus subtentum*	G2/S2
rough rabbits foot	*Quadrula cylindrica*	G3T2/S2
Appalachian monkeyface	*Quadrula sparsa*	G1/S1
goldencrowned kinglet	*Regulus satrapa*	G5/S2B,S5N
alderleaf buckthorn	*Rhamnus alnifolia*	G5/S1
lance-leaved buckthorn	*Rhamnus lanceolata var. glabrata*	G5T4T5/S1
capillary beakrush	*Rhynchospora capillacea*	G5/S1S2
sauger	*Sander canadensis*	G5
bigeye jumprock	*Scartomyzon ariommus*	G4
purple oat-grass	*Schizachne purpurascens*	G5S1
hard-stemmed bulrush	*Scirpus acutus*	G5/S1
whorled nutrush	*Scleria verticillata*	G5/S2
elliott sida	Sida elliottii	G4G5
redbreasted nuthatch	*Sitta canadensis*	G5/S2B,S4N
roundleaf clover	*Solidago patula*	G5/S1
Dismal Swamp southeastern shrew	*Sorex longirostris fisheri*	G5T2/S2
yellow-bellied sapsucker	*Sphyrapicus varius*	G5/S1B,S4N
sweetscent ladies'-tresses	*Spiranthes odorata*	G5/S3
great plains ladies' tresses	*Spiranthes magnicamporum*	G4/S1
Caspian tern	*Sterna caspia*	G5/S1B,S2N
silky camellia	*Stewarthia malachodendron*	G4/S2
Bigger's Cave amphipod	*Stygobromus biggersi*	G2G4/S1S2
Shenandoah Valley cave amphipod	*Stygobromus gracilipes*	G3G4/S2S3
barrens silky aster	*Symphotrychum pratense*	GNR/S1
Bewick's wren	*Thryomanes bewickii*	G5T2Q/S1B
Spanish moss	*Tillandsia usneoides*	G5/S1
purple lilliput	*Toxolasma lividus*	G2/S1

Common Name / Community	***Scientific Name***	**Federal/State Rankings**
Fraser's marsh St. John's-wort	*Triadenum fraseri*	G5/S1
least trillium	*Trillium pusillum var. virginianum*	G3T3/S2
winter wren	*Troglodytes troglodytes*	G5/S2B,S4N
American black bears	*Ursus americanus*	Threatened
large cranberry	*Vaccinium macrocarpon*	G4/S2
purple bean	*Villosa perpurpurea*	G1/S1
prostrate blue violet	*Viola walteri*	G4G5/S2
loblolly pine savanna natural community		
non-riverine saturated forest community		
Appalachian terrestrial dung community		
Appalachian cave drip pool/epikarstic community		
Appalachian cave stream community		
Appalachian cave stream riparian community		
oligotrophic saturated scrub community		
Atlantic white cedar swamp community		
brackish marsh community		
pocosin community		
spruce/fir forest		
high elevation cove forest		
Terrestrial Community mountain/piedmont acidic seepage swamp		

In conclusion, the mitigation payments for numerous, small impacts have been collectively pooled to provide larger scale, ecologically preferable mitigation. The Fund continues to provide excellent leverage for the mitigation dollar. From 249 acres of wetland impacts, over 500 acres of wetland and 350 acres of buffer are being restored. Through these projects 10,600 acres have been protected. Likewise with streams, from 187,772 linear feet of impacts, nearly 50,000 linear feet of streams are being restored or enhanced and over 737,000 linear feet will be protected. In total over 21,000 acres of land will be protected through use of these funds. At the close of 2010, over two-thirds of the accumulated mitigation payments have been authorized to a diverse array of non-tidal wetland, tidal wetland, and stream mitigation projects across Virginia. These projects provide a suite of typical wetland and stream restoration, enhancement, and preservation opportunities, as well as, unique projects aimed at improving water quality and/or providing additional ecological benefits. The Conservancy, with its partners, will continue to pursue the appropriate mitigation projects in river basins with mitigation need and available funds.

I. Introduction

The Virginia Aquatic Resources Trust Fund (Fund) is administered in partnership by The Nature Conservancy of Virginia (Conservancy) and the Norfolk District United States Army Corps of Engineers (Corps) to provide compensatory mitigation for permitted wetland and stream impacts in Virginia through an in-lieu-fee (ILF) agreement. The Fund provides one option for a permit applicant to address compensatory mitigation requirements associated with Section 404 and 401/Virginia Water Protection (VWP) permits issued by the Corps and the Virginia Department of Environmental Quality (DEQ), respectively. By consolidating the mitigation requirements of multiple small projects, the Conservancy and its partners are able to implement larger-scale

watershed efforts that restore, enhance, and protect water quality. The program is dedicated to providing the greatest compensatory mitigation value, while providing a specific emphasis on the protection of Virginia's rare plants, animals, and natural communities. These additional ecological benefits, which may also result in a higher potential for a project's long-term success, are achieved to a large extent, through the Conservancy's conservation planning and implementation efforts. The Conservancy attempts to maximize the ecological benefits of compensatory mitigation by locating mitigation projects in identified conservation priority areas within each watershed. For instance, many of the Fund's mitigation projects have been integrated into areas identified by the Conservancy's overall Conservation by Design strategy as important to protect the rare plants, animals, and natural communities of Virginia.

The Fund was established in 1995 as the Virginia Wetlands Restoration Trust Fund and operates in accordance with a Memorandum of Understanding (MOU) between the Conservancy and the Corps. The MOU was amended in 2003 to address impacts to stream resources throughout Virginia. Through the revised MOU, the name of the Fund was changed to the Virginia Aquatic Resources Trust Fund.

As stated in the MOU, a primary goal of the Fund is to ensure a "no net loss" of acreage, functions, and values through compensatory mitigation completed for impacts to aquatic resources of the same type and within the same watershed as the impacts. Typically this is done using a watershed approach to complete mitigation projects located in the same major river basin as the impacts. The fourteen major river basins used for this approach are the Atlantic Ocean, Big Sandy River, Chesapeake Bay, Chowan River, Lower James River, Middle James River, Upper James River, New River, Potomac River, Rappahannock River, Roanoke River, Shenandoah River, Tennessee River, and York River. Each basin is composed of the 8-digit hydrologic unit codes (HUC), with the exception that the Chesapeake Bay HUCs and Atlantic Ocean HUCs are separated for the purposes of the Fund reporting. The partnership with the Conservancy facilitates the efficient use of mitigation payments from many small impacts to provide larger, more cost-effective, and ecologically preferable mitigation projects.

The Fund is typically used to mitigate for impacts of less than three acres of wetlands and/or less than 2,000 linear feet (lf) of stream channel. The Fund is also used to provide mitigation for unauthorized impacts as directed by the agencies. The ability of a permit applicant to use the Fund as the selected mitigation option is at the discretion of the regulatory agencies, and is directed by federal guidance. The Corps determines the amount of the permit applicant's mitigation payment required to provide the appropriate mitigation for the permitted impact. The mitigation payments are held by the Conservancy in an interest-generating account. These payments are then used by the Conservancy to complete the required mitigation. Potential projects are proposed by the Conservancy, and Corps approval of both the proposed project and the requested funding amount is required prior to the initiation of formal activities on the project. Potential and proposed projects are also coordinated with, and reviewed by, DEQ, United States Fish and Wildlife Service (FWS), the Environmental Protection Agency (EPA) and the National Oceanic and Atmospheric Administration (NOAA) during a monthly agency meeting.

The mitigation sites are permanently protected, typically through recordation of a conservation easement or ownership by the Conservancy. Alternative protection methods may be implemented with approval from the Conservancy and the Corps. All interest earned and funds not spent on approved projects following project closure remain in the general balance of the Fund.

The VWP Permit Regulation (9VAC 25-210-115 E) defines the criteria for DEQ's approval of an ILF program. In accordance with this regulation, DEQ, acting on behalf of the State Water Control Board (Board), may approve the use of an ILF program by approving the use of a fund for a specific project when approving a VWP Permit or by granting approval of a fund at a Board meeting. The above-referenced regulation also requires the submittal of annual reports to the Board detailing the activities of the ILF program. This report is intended to fulfill this regulatory requirement.

Through December 31, 2010, the Fund has been used to mitigate for non-tidal wetland, tidal wetland, and stream impacts in the fourteen major river basins in Virginia. These impacts have generated $55,091,900 in mitigation payments as summarized in Table 19. From these mitigation payments, the Corps has authorized $39,666,500 for the Conservancy to complete activities on 112 potential mitigation projects. The Conservancy is actively pursuing mitigation activities on 94 of these sites in twelve of the major river basins. A map depicting the location of these sites across the state is included in Attachment B.

Table 19: Summary of Impacts, Mitigation Payments, and Funds Authorized from 1995-2010

Resource Type	Impacts (acres)	Mitigation Payments ($)	Authorized Funds ($)
Non-tidal Wetland	246.68	20,999,100	15,530,900
Tidal Wetland	2.63	635,800	693,000
Total	**249.31**	**21,634,900**	**16,223,900**
Resource Type	**Impacts (lf)**	**Mitigation Payments ($)**	**Authorized Funds ($)**
Stream (pre-USM)	167,690	25,313,000	22,649,000
Stream (USM)	20,082	8,144,100	793,600
Total	**187,772**	**33,457,100**	**23,442,600**
Grand Total		**55,091,900**	**39,666,500**

The following table summarizes the achievements of the Fund through 2010, indicating the amount of impacts by resource type and the total acres of wetlands and linear feet of streams restored and protected.

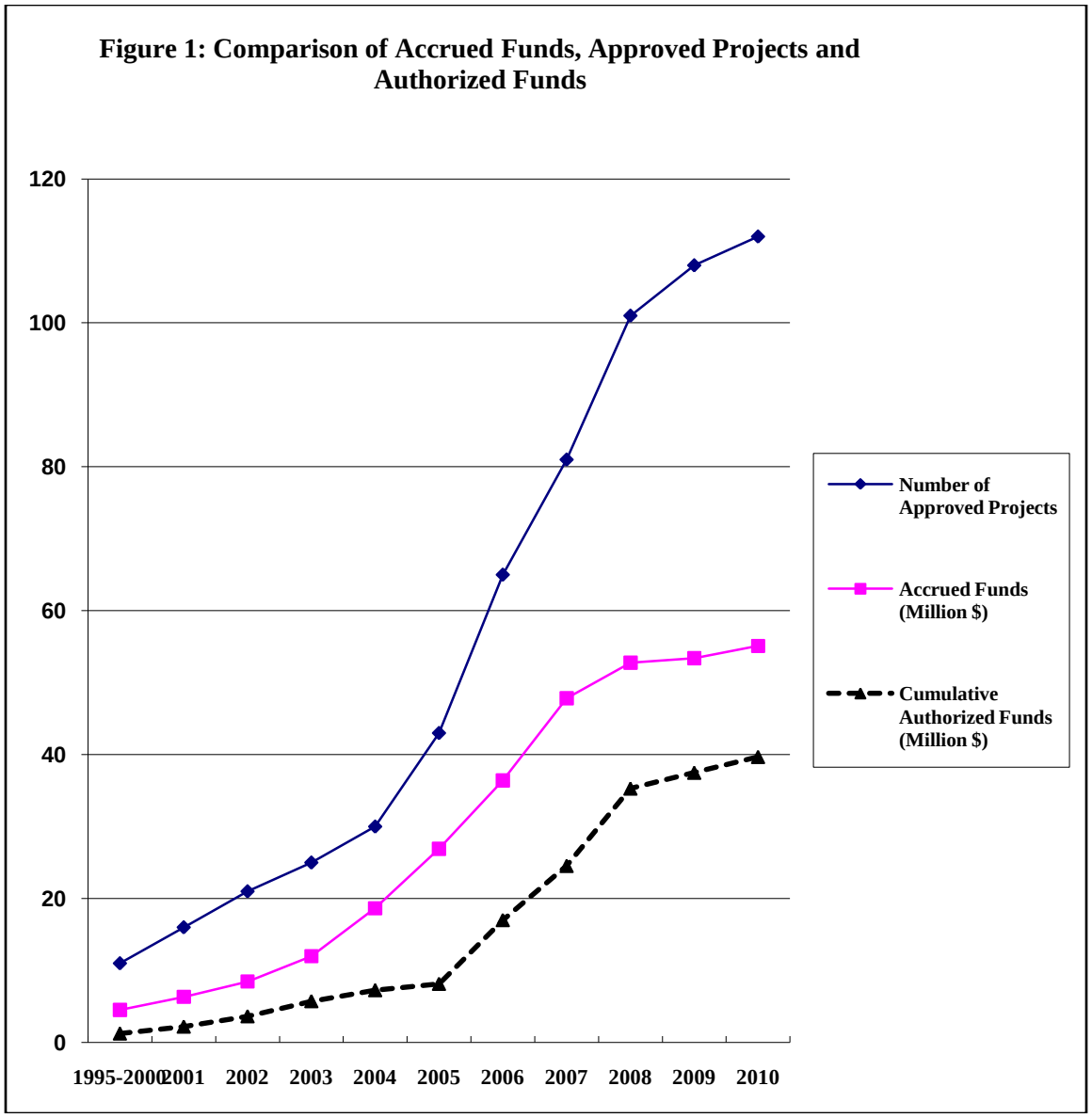
Table 20: Program-wide Leverage through 2010

Resource Type	Impacts	Restored	Preserved	Total Protected
Non-tidal Wetland (ac)	246.7	485	4027	4512
Tidal Wetland (ac)	2.63	28.8	536	565
Stream (lf)	187,772	49,355	688,512	737,867
Upland/Riparian Buffer (ac)	N/A	336	5,581	5,917
Additional Protected (ac)	N/A	N/A	10,499	10,499
Total (acres)	**249**	**850**	**20,643**	**21,493**
Total (linear feet)	**187,772**	**49,355**	**688,512**	**737,867**

Table 21 details the number of payments made to the Fund each year for each resource type since its inception in 1995.

Table 21: Summary of Payments into the Fund				
Year	Non-tidal Wetland	Tidal Wetland	Stream	Total Payments
1995	2	0	0	2
1996	13	3	0	16
1997	16	6	0	22
1998	21	4	0	25
1999	22	13	0	35
2000	31	4	0	35
2001	54	4	6	64
2002	88	8	3	99
2003	88	5	3	96
2004	57	5	57	119
2005	48	2	88	138
2006	43	6	87	136
2007	31	0	42	73
2008	20	1	28	49
2009	14	0	10	24
2010	18	1	14	33
Total	**566**	**62**	**338**	**966**

Figure 1 depicts the activity and growth of the Fund over the course of its operation. The mitigation payments for numerous, small impacts have been pooled to provide larger-scale, ecologically preferable mitigation. As the available balance of the Fund has grown, the ability of the program to pursue mitigation projects has increased. With the addition of two program staff in 2005, the number of approved projects nearly tripled in a three year period. In 2008, two additional staff positions were added to assist with project implementation, bringing the total program staff to five. At the close of 2010, over seventy percent of the accumulated mitigation payments have been authorized to a diverse array of non-tidal wetland, tidal wetland, and stream mitigation projects across Virginia. Mitigation projects have included a suite of typical wetland and stream restoration, enhancement, and preservation opportunities, as well as unique projects aimed at improving water quality and/or providing additional ecological benefits. Examples of distinctive projects include the re-establishment of oyster reefs and submerged aquatic vegetation beds, the removal of earthen dams, and the installation of a fish passage structure to allow the migration of anadromous fishes.



II. Impacts, Revenues, and Operational Costs through 2010

This section provides a summary of impacts and associated mitigation payments for all three resource types (non-tidal wetland, tidal wetland, and stream), presented as an annual total and cumulatively by major river basin. Additional program revenues and operational costs are also detailed in this section.

Non-Tidal Wetlands

Tables 22 and 23 provide the impact and mitigation payment summaries for non-tidal wetlands. The Fund has been used to mitigate for non-tidal impacts each year since its inception. As of the end of 2010, the Fund has been used to mitigate for 246.68 acres of non-tidal wetland impacts across all fourteen major river basins. These impacts have generated total mitigation payments of $20,999,100 to the Fund for non-tidal wetlands.

Table 22: Non-tidal Wetland Impacts and Mitigation Payments by Year

Year	Impacts (ac)	Mitigation Payments ($)
1995	2.9	65,000
1996	20.5	460,200
1997	26	1,305,500
1998	16.3	779,300
1999	13.9	967,600
2000	7.4	836,500
2001	12.1	1,243,900
2002	20.2	2,019,
2003	28.2	3,219,900
2004	30.3	1,969,400
2005	6.7	830,100
2006	17.5	1,986,100
2007	22.1	3,124,400
2008	14.7	1,356,800
2009	2.6	286,6000
2010	5.3	548,800
Totals	**246.7**	**20,999,100**

A summary of non-tidal wetland impacts, wetland impact type, and mitigation payments by basin is provided in Table 23. Impacts have occurred in all fourteen major river basins. Historically, the majority of non-tidal wetland impacts (more than 20 acres) and associated mitigation payments have accumulated in the following basins: Chesapeake Bay, Chowan River, Lower James River, and Middle James River. A moderate amount of impacts and mitigation payments have accumulated in the Potomac River, Rappahannock River, York River, Shenandoah River, and Tennessee River basins. Relatively few impacts (less than 6 acres) and associated payments have been received in the Atlantic Ocean, Big Sandy, Upper James River, New River, and Roanoke River basins. Roughly three quarters of all impacts were to palustrine forested wetlands, with the remaining quarter split between emergent and shrub-scrub wetland types.

Table 23: Non-tidal Wetland Impacts and Mitigation Payments by Basin through 2010

Basin	Non-Tidal Wetland Type Impacted			Impacts (ac)	Mitigation Payments ($)
	PEM or POW (ac)	PSS (ac)	PFO (ac)		
Atlantic Ocean	0.46	0	0.82	1.28	129,200
Big Sandy	0.02	0.09	0	0.11	8,000
Chesapeake Bay	4.09	1.75	40.78	46.62	6,337,000
Chowan	5.39	3.14	33.19	41.72	1,633,500
Lower James	6.44	3.07	60.81	70.32	4,588,800
Middle James	2.04	2.91	15.5	20.45	1,731,700
Upper James	1.22	0.21	1.88	3.31	154,900
New	1.54	0.09	0	1.63	72,100
Potomac	3.43	1	4.36	8.79	1,508,500
Rappahannock	1.13	0	9.08	10.21	1,471,600
Roanoke	1.44	0.51	3.7	5.65	464,000
Shenandoah	6.48	0.66	1.94	9.08	827,400
Tennessee	4.06	12.72	1.69	18.47	907,100
York	0.7	0.41	7.96	9.07	1,165,300
Total	**38.44**	**26.56**	**181.71**	**246.71**	**20,999,100**

PEM: Palustrine Emergent Wetland; POW: Palustrine Open Water; PSS : Palustrine Scrub-shrub; PFO: Palustrine Forested Wetland

Table 24: Tidal Wetland Impacts and Mitigation Payments by Year		
Year	**Impacts (ac)**	**Mitigation Payments ($)**
1996	0.05	13,000
1997	0.259	15,400
1998	0.301	48.000
1999	0.319	31,900
2000	0.092	12,100
2001	0.036	11,600
2002	0.159	19,300
2003	0.06	12,200
2004	0.078	33,600
2005	0.02	2,700
2006	0.657	166,400
2007	0	0
2008	0.583	262,400
2009	0	0
2010	0.016	7,200
Total	**2.63**	**635,800**

Tidal Wetlands

Tables 24 and 25 provide the impact and mitigation payment summaries for tidal wetland resources. The Fund has been used to mitigate for impacts to tidal wetlands each year since 1996. As of the end of 2010, the Fund has been used to mitigate for 2.63 acres of tidal wetland impacts across six major river basins. These impacts have generated total mitigation payments of $635,800 to the Fund for tidal wetlands.

A summary of tidal wetland impacts, wetland impact type, and mitigation payments by basin is provided in Table 25. Through the end of 2010, tidal impacts have been paid into the Fund from all tidally influenced basins except the Rappahannock and York River basins. Tidal impacts are in general very small and infrequently accrued into the Fund. Most tidal wetland impacts paid into the Fund have occurred in the Atlantic Ocean Basin (1 acre) and the Chesapeake Bay Basin (1 acre), accounting for two-thirds of all tidal impacts amassed by the Fund. The majority of tidal wetland impacts occurred to estuarine emergent wetlands (e.g. salt-marsh) although open water/unconsolidated bottom impacts accounted for roughly a quarter of the impacted acres.

Table 25: Tidal Wetland Impacts and Mitigation Payments by Basin through 2010				
	Tidal Wetland Type Impacted			
Basin	**EEM (ac)**	**EOW/UB (ac**	**Impacts (ac)**	**Mitigation Payments ($)**
Atlantic Ocean	0.781	0.225	1.006	176,700
Chesapeake Bay	0.8	0.267	1.067	328,100
Chowan	0.014	0	0.014	2,200
Lower James	0.374	0.052	0.426	88,800
Potomac	0.06	0.05	0.11	38,900
York	0	0	0	1,000
Total	**2.029**	**0.594**	**2.623**	**635,700**
EEM: Estaurine Emergent Wetland; EOW: Estaurine Open Water; UB: Unconsolidated Bottom				

Streams

Tables 26 and 27 provide the impact and mitigation payment summary information for streams. The Fund has been used to mitigate for stream impacts since 2001. However, the majority of the use of the Fund as compensatory mitigation for stream impacts has been since the revision of the MOU in 2003. Beginning in 2007, the Fund began tracking stream impacts as assessed

Table 26: Stream Impacts and Mitigation Payments by Year

Year	Impacts (lf)	Mitigation Payments ($)
2001	5,973	550,300
2002	1,115	115,600
2003	2,576	274,800
2004	40,714	4,646,400
2005	55,095	7,422,200
2006	41,389	7,366,000
2007	14,925	4,360,600
2007 (USM)	9,194	3,924,000
2008	1,641	222,700
2008 (USM)	7,963	3,109,600
2009 (USM)	1,142	420,400
2010	4,262	354,500
2010 (USM)	1,783	690,000
Total	**187,772**	**33,457,100**

by the Unified Stream Methodology (USM) that was jointly released by the Corps and DEQ, and has tracked these impacts separately for reporting purposes. As of the end of 2010, the Fund has been used as mitigation for 187,772 linear feet of stream impacts across twelve of the major river basins. These impacts have generated $33,457,100 in total mitigation payments to the Fund for streams.

Table 27: Stream Impacts and Mitigation Payments by Basin through 2010

Basin	Impacts (lf)	Mitigation Payments ($)
Big Sandy	3,006	711,900
Chesapeake Bay	1,399	272,600
Chowan	2,173	566,000
Lower James	22,983	5,077,300
Middle James	33,288	5,460,000
New	3,241	351,400
Potomac	76,813	11,658,200
Rappahannock	15,862	4,473,400
Roanoke	7,562	1,412,600
Shenandoah	14,797	2,591,400
Tennessee	5,359	713,700
York	1,289	168,600
Total	**187,772**	**33,457,100**

A summary of stream impacts and mitigation payments by basin is provided in Table 27. Through the end of 2010, the Fund has been used to mitigate for impacts to streams in all basins except for the Atlantic Ocean and the Upper James River basins. The Potomac River Basin has accrued more than twice as many as any other basin, with over 75,000 linear feet of impacts. The Fund has been used to mitigate for a moderately high number of impacts (between 10,000 and 30,000 linear feet) in the Lower James River, Middle James River, Shenandoah River, and Rappahannock River basins, while relatively few impacts (less than 8,000 linear feet) have accrued in the Tennessee River, Chesapeake Bay, Chowan River, New River, Roanoke River, Big Sandy and York River basins.

Additional Revenues and Operational Costs

Upon receipt by the Conservancy, the mitigation payments are deposited in an interest generating account. The Conservancy provides the Corps with the account statements quarterly. All earned interest, any remaining authorized funds at project closure, and any net proceeds resulting from the sale of a project property (sold with a protective instrument to protect the mitigation area) remain in the Fund to accomplish additional mitigation projects.

Through 2010, the Fund balance has generated $4,705,800 in interest. These monies are not directly associated with a specific permitted impact; therefore, they are not associated with specific mitigation requirements. Table 28 shows allocated funds that have been unallocated or returned to the general balance of the Fund. Funds become unallocated when projects are closed with unspent funds remaining in the project budget, or when the project site is transferred through a land sale, subject to a conservation easement or deed restriction. Following closure of forty-nine projects, $1,295,700 was unallocated. Land sales associated with ten projects returned $2,328,600 to the Fund. In total, $3,624,500 of allocated funds has been returned to the general Fund balance.

Table 28: Summary of Allocated Funds Returned to General Fund Balance or Unallocated through 2010

Number of Projects	Amount Approved ($)	Balance Returned or Unallocated ($)	Reason for Return
42	8,570,500	1,295,700	Project Closure
10	3,711,100	2,328,800	Land Transfers
52	**12,281,600**	**3,624,500**	**Total**

There are currently five staff positions funded by the program. As of December 31, 2010, the Corps has authorized a total of $2,643,800 to fund these five positions. The Corps has authorized $14,589 to a general equipment cost center, which has been used to purchase field supplies used across multiple sites. In 2009, the Corps authorized $200,000 to be used for project development across the state. These funds are used to support feasibility assessments and negotiations prior to site acquisition or full project approval.

In accordance with the 2003 revised MOU, the Conservancy receives an overhead fee of 3% of each mitigation payment. These funds are used to reimburse overhead and related administrative costs incurred by the Conservancy. Through December 31, 2010, total overhead charges were $1,288,900. Additional bank fees and associated charges through December 31, 2010 totaled $91,200. Beginning in December 2008, higher bank assessment fees were charged through the FDIC Temporary Liquidity Guarantee Program through December 31, 2010. This resulted in considerably higher bank fees than are typically charged to the Fund.

In summary, as of December 31, 2010, the Fund has generated $4,705,800 in interest, and has incurred total costs or authorizations of $4,238,500 to fund staff positions, general equipment and project development, overhead, and bank fee charges.

III. Summary of 2010 Impact and Mitigation Payments, Project Proposals, and Funding Authorizations

In 2010, the Fund was used as a compensatory mitigation option for stream, tidal and non-tidal wetland impacts in nine of the major river basins. There were no new impacts paid into the Fund within the Big Sandy River, Upper James River, Rappahannock River, Atlantic Ocean or York River basins. The Conservancy requested funding to complete mitigation activities for 4 new projects and additional funding for 5 previously approved projects. The Corps granted funding approval for all of these requests. A detailed summary of these activities is provided below.

Table 29: Impacts and Mitigation Payments in 2010

Resource Type	Impact (ac)	Mitigation Payments ($)
Non-tidal Wetland	5.40	548,800
Tidal Wetland	0.02	7,200
Stream	6,045	1,044,600
Total		**1,600,600**

Impacts and Mitigation Payments

The Fund was used as the compensatory mitigation option for numerous non-tidal wetland, tidal wetland, and stream impacts across the state in 2010. Table 29 details the impacts and mitigation payments that were received by the Fund during 2010. The Fund was used to compensate for: 5.4 acres of non-tidal wetland impacts with an average mitigation payment of $101,600 per acre, 0.2 acres of tidal wetlands with an average mitigation payment of $360,000 per acre, and 6,045 linear feet of stream impacts with an average mitigation payment of $173 per linear foot. In total, the Fund received $1,600,600 in mitigation payments in 2010. This amount accounts for approximately three percent of the total mitigation payments received by the Fund to date, and an increase in payments from the previous year, though a significant decrease in payments and impact trends over recent years.

Mitigation Project Proposals and Approvals

Per the MOU, the Corps seeks comments from DEQ and the FWS prior to the approval or denial of a specific Fund mitigation proposal. Since 2006, monthly agency meetings have been held for project proposal review and coordination. During these meetings, the Conservancy presents potential projects to the Corps, FWS, and DEQ. These meetings were initiated to provide a forum for discussion and review of the projects, while attempting to streamline the review and coordination process. Throughout 2010, both EPA and NOAA were involved with project review and discussion.

In 2010, the Conservancy closed one project previously approved by the Corps, as shown in Table 30. This project was closed due to the inability to complete negotiations and therefore did not generate any mitigation credit. All funds were unallocated at the time of closing and returned to the Fund's general balance. A total of $319,032 was returned to the general balance of the Fund following closure of this project.

Table 30: Projects Closed in 2010

Project ID	Project Name	Corps Closing Date	Amount Approved ($)	Amount Spent ($)	Revenue from Land Transfer	Total Returned to General Balance ($)	Credits Assigned
LJ-9	James River site	8/11/2010	319,032.00	0.00	0.00	319,032.00	No
Total			**$319,032.00**	**$0.00**	**$0.00**	**$319,032.00**	

In 2010, the Conservancy requested funding to complete numerous mitigation activities, including full restoration expenses, land acquisition, and additional expenses, for 9 projects. These projects included mitigation opportunities for non-tidal and tidal wetlands and streams across six of the major river basins. The Corps granted funding approval for all of these projects. Table 31 provides summary information for the 9 projects approved in 2010.

In 2010, $2,126,500 was authorized towards the mitigation activities associated with the 9 approved projects. The authorized funds will complete mitigation projects across six major river basins. These approved projects provide a suite of wetland and stream restoration, enhancement, and preservation mitigation opportunities. Several of the projects involve significant stream footage or wetland acreage, and most provide mitigation opportunities for multiple resource types.

A total of $1,410,000 was authorized for non-tidal wetland mitigation projects in four river basins including the Chesapeake Bay, Lower James River, Tennessee River and York River basins. Money was authorized for one tidal mitigation project in the Chesapeake Bay basin ($45,000). A total of $671,500 was authorized for stream projects in the Chowan River, Lower James River, Roanoke River, and Tennessee River basins.

Working with numerous partners, several of the projects contribute to large scale conservation efforts. While providing compensatory mitigation, many of these projects also contribute to the protection of Virginia's rare plants, animals, and natural communities including such highlights as dusky darter (*Percina sciera*), Roanoke logperch (*Percina rex*), yellow lampmussel (*Lampsilis cariosa*), yellow lance (*Elliptio lanceolata*), whorled nutrush (*Scleria verticillata*), barrens silky aster (*Symphotrychum pratense*), northern map turtle (*Graptemys geographica*), prostrate blue violet (*Viola walteri*), and Vandal's cave isopod (*Caecidotea vandeli*). Detailed summaries of each project are included in Section V.

Table 31: Projects Approved in 2010

Project ID	Project Name	Resource Type	Purpose of Proposal	Proposal Date	Corps Approval Date	Funds Authorized		
						Non-Tidal Wetland Projects ($)	Tidal Wetland Projects ($)	Stream Projects ($)
CB-18	Dragon Run Site #2	NTW, TW	M	4/1/2010	8/11/2010	45,000	45,000	10,000
CH-16	Nottaway River Site	S, NTW	M	3/8/2010	8/11/2010	0	0	17,529
LJ-10	James River (VCU)	NTW, S, TW	M	5/11/2010	8/11/2010	102,500	0	102,500
LJ-11	Chickahominy River site	NTW, S	M	4/14/2010	8/11/2010	300,000	0	300,000
LJ-13	James River Site #4	NTW, S	M	5/14/2010	8/11/2010	47,500	0	47,500
RO-6	Roanoke Headwaters (Blake)	S	M	06/08/2010	8/11/2010	0	0	11,000
TN-8	North Fork Holston site	NTW	M	08/05/2010	8/11/2010	865,000	0	0
TN-9	Cedars (Brooks)	S	M	05/12/2010	07/2/2010	0	0	183,000
YK-5	Cumberland Marsh (Healthvest, Inc)	NTW, S, TW	M	7/23/2010	8/11/2010	50,000	0	0
				Totals		$1,410,000	$45,000	$671,529
				Grand Total		$2,126,529		

Major River Basins

CB - Chesapeake Bay River Basin; LJ - Lower James River Basin; MJ - Middle James River Basin; UJ - Upper James River Basin; PO - Potomac River Basin; RP - Rappahannock River Basin; RO - Roanoke River Basin; SH Shenandoah River Basin; TN - Tennessee River Basin; YK - York River Basin

Resource Types

TW - Tidal Wetland; NTW - Non-tidal Wetland; S - Stream

Purpose of Proposal

M - Mitigation (may include A, AC, C, BS); A - Real Estate Appraisal; AC - Acquisition; C - Conceptual Plan Development; F - Feasibility Study; BS - Boundary Survey)

IV. Mitigation Overview

The Fund is dedicated to providing the greatest compensatory mitigation value, while placing a specific emphasis on the protection of Virginia's rare plants, animals, and natural communities. As per the MOU, a primary goal of the Fund is to ensure a "no net loss" of acreage, functions, and values for compensatory mitigation completed for impacts to aquatic resources of the same type and within the same watershed as the impacts. The following sections detail the methodologies used by the Fund to help achieve these program goals.

Mitigation Value for Projects

The goal of no net loss of wetland acreage and function is defined in federal and state regulations. Activities which can be credited as wetland mitigation include wetland creation, restoration, enhancement, and preservation. In addition, the restoration, enhancement, or preservation of upland areas adjacent to wetland systems can also be credited as wetland mitigation.

To determine and track the progress of the Fund toward the no net loss goal, information about impacts and mitigation is required. The Fund uses wetland impact area (acres) to determine the minimum requirement of wetland replacement necessary for each basin. Wetland replacement is achieved through wetland restoration or creation such that wetland acreage is gained to offset losses, consistent with state and federal laws. To address functional losses, ratios are applied to wetland impacts. The following impact to compensation ratios are applied to acres of wetland impacts in order to calculate the mitigation liability for each basin: PFO – 2:1, PSS – 1.5:1, PEM – 1:1, POW – 1:1, E1/2EM – 1: 1. It is generally accepted that higher ratios for wetland types that take longer to establish (e.g. forested wetlands) are necessary. To meet or exceed the mitigation liability in a basin, the Conservancy may pursue other activities in addition to restoration and creation.

In 2006, the Corps, FWS, and DEQ agreed that the standard ratios included in Table 32 may typically be used for crediting the Fund's wetland mitigation projects. These standard ratios were used to update the information provided for each wetland mitigation project in Section V of this report. For certain projects under specific conditions, different ratios may be appropriate. In these cases, the proposed ratio is coordinated for acceptance by the regulatory agencies.

Table 32: Standard Wetland Compensation Acres to Compensation Credit Ratios Used by the Fund

Proposed Mitigation Activity	Ratio
Wetland Restoration	1 : 1
Wetland Creation	1 : 1
Wetland Enhancement - Ratio ranges depending upon amount of enhancement.	3 : 1 to 5 : 1
Wetland Preservation	10 : 1
Upland Buffer Restoration	15 : 1
Upland Preservation - Ratio may be higher depending upon condition, location, or other factors.	20 : 1

Until implementation of the Unified Stream Methodology (USM) in 2007, standard compensatory mitigation ratios had not been defined for stream impacts and mitigation in Virginia. Examples of accepted activities which can be considered stream mitigation include restoration (activities to restore proper dimension, pattern, and profile), enhancement (e.g., creation of bankfull benches, bank shaping/sloping, installation of in-stream structures, planting of live-stakes), riparian buffer planting (for this report, includes the area within the first 200 feet from the top of the bank), livestock exclusion, and channel and upland riparian buffer preservation.

Due to the lack of a standard crediting method prior to mid-2007, the programmatic goal was to complete a combination of stream restoration, enhancement, and preservation projects with significant ecological benefit. Unlike with the wetland projects, "crediting" of stream projects is not completed for the Fund until projects are funded by impacts paid through the USM. Therefore, for the majority of this and previous annual reports, the mitigation activities for each stream project are described with the associated linear footage and protected riparian buffer widths. Projects funded by impacts paid through the USM will be reported and credited accordingly.

For both wetland and stream projects, only those areas protected in accordance with the MOU are considered for mitigation. These are typically confined to ecologically important aquatic resources and buffers on the site in which activities incompatible with mitigation have been prohibited. The Conservancy refers to this "no-touch" protected area as the mitigation area. Frequently, the total area protected exceeds the area counted as mitigation. This acreage is shown as "Additional Protected" and provides beneficial landscape context for the mitigation projects.

In addition to the typical activities (noted above) which are considered mitigation for wetland and stream impacts, the Conservancy has pursued unique projects aimed at improving water quality and/or providing additional ecological benefits. These projects include the re-establishment of oyster reefs and submerged aquatic vegetation beds, the removal of earthen dams, and the installation of a fish passage structure to allow the migration of anadromous fishes. While these projects may not be considered typical mitigation for wetland and stream impacts, their role in the improvement of water quality and benefit to fish and wildlife has been deemed appropriate for funding through the Fund. These projects may be credited at a higher ratio, which reduces the amount of mitigation credit when compared to typical restoration projects.

Mitigation Project Site Selection

The following factors are considered during the identification and review of a project proposed for funding through the Fund.

- Appropriateness of the site to provide mitigation for permitted impacts
- Mitigation need for a project based on major river basin
- Likelihood of long-term success of the project
- Proximity of the site to identified areas of concern, environmentally sensitive sites, or other protected sites
- Project cost versus the mitigation value of the project

A proposed project must comply with the program goal to improve and protect water quality and provide appropriate and practicable mitigation for permitted impacts. As detailed in Section II, permitted impacts, the associated mitigation payments, and mitigation projects are tracked and reported by major river basin on an annual basis. This tracking process is consistent with the Virginia Water Protection Permit Regulation (9VAC 25-210-115 E), which defines the criteria for DEQ's in-lieu fee fund approval. As previously stated, the primary goal of the Fund is to meet mitigation needs on a major river basin basis. Although not required, a secondary goal of the Fund is to mitigate for permitted impacts through projects in the same or adjacent HUC. However, this goal is often cost prohibitive for the Fund based on limited impacts and associated mitigation payments in certain areas.

In addition to providing the appropriate mitigation, the program also considers the long-term success and ecological benefits of each project. The Conservancy is a leading international, non–profit organization with the mission of preserving the plants, animals, and natural communities that represent the diversity of life on Earth. To achieve this mission, the Conservancy has developed a strategic, science-based planning process, called Conservation by Design, which helps the organization identify the highest-priority areas that, if protected, will secure biodiversity over the long term. The Conservancy uses this tool to help identify preferred areas to search for a potential mitigation site within each major river basin.

Conservation by Design entails a four-step, disciplined process that enables the Conservancy to develop the appropriate mix of actions to abate threats in a given place and to secure tangible, lasting conservation results. A detailed description of Conservancy by Design can be found at the Conservancy's website (www.nature.org).

The Conservancy uses Conservation by Design to focus on prioritized areas within each major river basin to identify a potential stream or wetland mitigation site. In addition to the long-term protection of a specific plant or animal species or natural community, this approach also develops protection corridors within a landscape of priority conservation areas.

The primary reason for locating the Fund's mitigation projects within this conservation framework is to increase the potential ecological benefits of the mitigation site beyond its own "footprint." An example of the success of using Conservation by Design as a tool in this program is demonstrated in the Chowan River Basin, where the Fund has contributed to the protection and restoration of land within the Back Bay, North Landing River, and Northwest River conservation corridors. These corridors have been recognized by federal, state, local, and environmental organizations as high conservation priorities. The Fund has protected over 1,700 acres of land within these corridors and is actively restoring/enhancing over 200 acres of wetlands. These mitigation projects compliment the tens of thousands of acres that federal, state, local and conservation organizations have protected in these areas using other funds. A map of these conservation corridors is included in Attachment B.

Projects located outside of Conservancy identified priority areas are considered and often proposed in partnership with natural resource partners based on the mitigation needs for the basin, mitigation opportunities at the specific site, ecological benefits provided by the project, and the likelihood of long-term success.

Mitigation Monitoring and Project Success

Monitoring of an approved project is critical to determine the overall success of the project in terms of mitigation. Prior to 2004, monitoring and success criteria were not assigned to several projects, particularly projects involving stream mitigation or non-typical mitigation. Monitoring and success criteria for stream mitigation were not defined or standardized in Virginia prior to 2004.

Conservancy staff has worked to standardize the mitigation plans, including the requirements for monitoring and the success criteria of the proposed projects. The Conservancy prepares a mitigation plan with requirements for monitoring and success for agency approval for all newly proposed and approved projects.

As stated in the MOU, the Conservancy is committed to ensuring that the completed projects are successful, and will repair or perform corrective action on projects that are determined to be unsuccessful. To help ensure this commitment, as required by the MOU, all projects proposed since 2003 have 20% of the restoration costs authorized and set aside to complete corrective actions if necessary.

Long-Term Protection and Stewardship

In accordance with federal and state requirements, each mitigation project must have a provision for long-term protection of the mitigation area. This provision is most often a conservation easement, deed restriction, dedication as a natural area preserve, or ownership by the Conservancy. If land is later transferred out of Conservancy ownership, permanent

protective instruments are placed on the property at that time. Alternative protection methods may be implemented with approval from the Corps. These instruments protect the ecologically important aquatic resources and buffers on the mitigation site through the prohibition of certain activities such as, but not limited to, silviculture, agriculture, and development. The Conservancy refers to this "no-touch" protected area as the mitigation area.

Protective instruments are often placed on entire tracts of land, and not just over the identified mitigation area. Although certain activities outside the mitigation area are restricted by the easement, other activities may be allowed which renders the acres ineligible to serve as mitigation for permitted impacts. While the entire tract may not count as mitigation, its protection improves the overall landscape context of the mitigation site. The Conservancy tracks this additional acreage protected by the easement but located outside of the mitigation area as "additional protected acreage." The mitigation area acreage and additional protected acreage for each project are detailed in the Project Summaries and tables included in Section V.

Once the mitigation project has been finalized and the land protected, there is a need for a management plan to care for the area over the long term. As part of a project's proposal, the Conservancy often requests funds for the continual management and stewardship of the site. These funds are held in a stewardship endowment and used to fund ongoing monitoring of the conservation easement or deed restrictions. Project easements are sometimes held by one of the Conservancy's partners, who are then responsible for the stewardship, and the associated monitoring and reporting, of the site. For these projects, funds may be requested for the stewardship activities conducted by the partner.

Under certain circumstances, the Conservancy initially purchases the property and then transfers the parcel or sections of the parcel to another entity, such as a government organization, a local land trust, or a conservation buyer. All properties are transferred with legally binding restrictions, as described above, which limit certain land practices and uses, to ensure ultimate protection of the mitigation area. Each entity must be committed to protecting the property's important natural values and willing to ensure the lands' long-term conservation and protection. The proceeds from these land sales are returned to the Trust Fund account and used to accomplish additional mitigation projects.

The Corps reviews the proposed protective instrument for each project and has the final authorization on the appropriateness of the proposed form of protection, as well as the content of each protective instrument. Details regarding the long-term protection and stewardship for each mitigation project are included under the Project Summaries in Section V.

Partners

Partnerships are often instrumental for ensuring the success of each mitigation project and advancing the goals of the program. The Conservancy has partnered with federal, state, and local government groups, as well as private non-profit and for profit organizations to offer a variety of mitigation opportunities, site locations, and aquatic resource benefits. Conservancy policy requires that each partner organization be evaluated to ensure that it is in good financial standing and has the staffing capacity to carry out the project.

Several of the mitigation projects are part of a larger land protection or restoration opportunity sponsored by numerous partners. It is important to note that the Fund claims only the mitigation opportunities on the acreage directly funded through the program, and not the additional acreage acquired or accomplished by the partners.

The landowner is one of the most important partners to ensure the success of a mitigation project. Landowners for current projects include federal, state, and local governments, non-profit organizations, and private citizens. These landowners are dedicated to the conservation of the resources and are often interested in showcasing the mitigation activities to other landowners, while setting a precedent within the conservation area.

Table 33 contains a sample of the groups with which the Conservancy has partnered to achieve the mitigation projects included in this report. The diversity and expertise of these partners is a critical component to the success of the individual mitigation projects, as well as the success of the program. Details regarding partnering opportunities for each mitigation project are included under the Project Summaries in Section V.

Table 33. VARTF Partner Organizations

Bedford County	Northern Virginia Conservation Trust
Canaan Valley Institute	Northern Virginia Soil and Water Conservation District
Cave Conservancy of the Virginias	Old Dominion University
Central Virginia Battlefields Trust	Orange County
Chesapeake Bay Foundation	Rappahannock Phragmites Action Committee
Christopher Newport University	Rivanna Sewer and Water Authority
City of Bedford	Spotsylvania County
City of Charlottesville	Stafford County
City of Fredericksburg	Trust for Public Land
City of Harrisonburg	United States Army Corps of Engineers
Culpeper County	United States Environmental Protection Agency
Ducks Unlimited	United States Fish and Wildlife Service
Fairfax County	Valley Conservation Council
Fauquier County	Various Consulting and Engineering Firms
Friends of the Rappahannock	Various Individual Landowners
Goose Creek Association	Virginia Commonwealth University
Henrico County	Virginia Department of Conservation and Recreation
James City County	Virginia Department of Environmental Quality
James River Association	Virginia Department of Forestry
Loudoun County	Virginia Department of Game and Inland Fisheries
Middle Peninsula Land Trust	Virginia Institute of Marine Science
Middle Peninsula Public Access Authority	Virginia Marine Resources Commission
National Park Service	Virginia Outdoors Foundation
Natural Resources Conservation Services	Virginia Tech
New River Land Trust	Western Virginia Land Trust

Additional Program Benefits

In addition to the direct mitigation of surface water impacts, the Fund provides significant supplementary benefits to Virginia's resources. Many of these additional benefits are made possible through the site identification process and partnering opportunities outlined above.

Through Conservation by Design, mitigation sites are often located within a conservation framework that provides greater ecological benefit than would an isolated project with the same mitigation activities. The projects are often part of an on-going conservation initiative with comprehensive ecological management plans. The large size of many of the projects (including both the mitigation areas and additional protected acreage) provides significant habitat for wildlife that depend upon large, contiguous forest blocks, while also providing additional buffering protection for aquatic resources. These projects often provide corridors to connect preserved properties or surround and buffer a critical area. Many of the projects are listed habitat sites for state and/or federal threatened or endangered species and natural communities, and have documented occurrences of the Virginia Department of Conservation and Recreation Natural Heritage Elements. In addition, many of the projects provide direct and indirect improvements to impaired systems, such as TMDL listed streams, or added protection to large or significant resource systems, including the Clinch River, Great Dismal Swamp, and the Chesapeake Bay watershed. Several sites also have significant historic or cultural resource preservation benefits or protect unique natural features.

Table 34 lists the rare species, natural communities, and unique natural features that could potentially benefit from the approved mitigation projects of the Fund, through water quality improvement, habitat protection, feeding and nursery habitat protection, and direct enhancement or restoration of the resource. This list was developed utilizing existing conservation planning information, as well as other data.

Table 34: Conservation Targets

Common Name / Community	***Scientific Name***	**Federal/State Rankings**
Virginia stonefly	*Acroneuria kosztarabi*	G1/S1
northern saw-whet owl	*Aegolius acadicus*	G5/S1B,S1N
sensitive joint vetch	*Aeschynomone virginica*	G2/S2
dwarf wedgemussel	*Alasmidonta heterodon*	G1,G2/S1
elktoe	*Alasmidonta marginata*	G4/S1,S2
western sand darter	*Ammocrypta clara*	G3
pearly everlasting	*Anaphalis margaritacea*	G5/S1
hairy rockcress	*Arabis hirsuta var. adpressipilis*	G5T4Q/S1S2
Elliott's aster	*Aster puniceus elliottii*	G5T34/S1
tropical water-hyssop	*Bacopa innominata*	G3,G5/S2
upland sandpiper	*Bartramia longicauda*	G5/S1B
aster-like boltonia	*Boltonia asteroides*	G5/S3
Carolina boltonia	*Boltonia caroliniana*	G4/S2
blue-hearts	*Buchnera americana*	G5/S1S2
Carolina fanwort	*Cabomba caroliniana*	G3G5/S1
Price's cave isopod	*Caecidotea pricei*	G3G4/S2S3
hoary elfin	*Callophrys polios*	S1S3
mountain bittercress	*Cardamine clematitis*	G2G3
crawe sedge	*Carex crawei*	G5/S2
epiphytic sedge	*Carex decomposita*	G3/S2
a sedge	*Carex striata*	G4/S2
purple finch	*Carpodacus purpureus*	G5/S1B,S5N
hermit thrush	*Catharus guttatus*	G5/S1B,S5N
Atlantic white cedar	*Chamaecyparis thyoides*	G4/S2

Common Name / Community	***Scientific Name***	**Federal/State Rankings**
northeastern beach tiger beetle	*Cicindela dorsalis ssp. dorsalis*	Threatened
northern harrier	*Circus cyaneus*	G5/S1S2B,S3N
sawgrass	*Cladium mariscus var. jamaicense*	G5T5/S1
spreading pogonia	*Cleistes divaricata*	G4/S1
bunchberry	*Cornus Canadensis*	G5/S1
Virginia big-eared bat	*Corynorhinus townsendii virginianus*	G4T2/S1
Potomac sculpin	*Cottus bairdi*	Potomac and James restricted
timber rattlesnake	*Crotalus horridus*	G4TUQ/S1
canebrake rattlesnake (coastal plain population)	*Crotalus horridus*	G4TUQ/S1
eastern hellbender	*Cryptobranchus alleganiensis*	G3G4/ S2S3
spectaclecase	*Cumberlandia monodonta*	G3/S1
button-bush dodder	*Cuscuta cephalanthi*	G5/S1
pretty dodder	*Cuscuta indecora*	G5/S2
steelcolor shiner	*Cyprinella whipplei*	G5/S1
showy lady's slipper	*Cypripedium reginae*	G4/S1
magnolia warbler	*Dendroica magnolia*	G5/S2B
showy tick-trefoil	*Desmodium canadennse*	G5/S1S2
dromedary pearlymussel	*Dromus dromas*	G1
beaked spikerush	*Eleocharis rostellata*	G5/S3
yellow lance	*Elliptio lanceolata*	G2G3/S2S3
alder flycatcher	*Empidonax alnorum*	G5/S1B
big bluet	*Enallagma durum*	G5/S3
cumberland combshell	*Epioblasma brevidens*	G1
oyster mussel	*Epioblasma capsaeformis*	G1/S1
Parker's pipewort	*Eriocaulon parkeri*	G3/S2
bluebreast darter	*Etheostoma camurum*	G4/S2
ashy darter	*Etheostoma cinereum*	G2G3/S1
longfin darter	*Etheostoma longimanum*	James River endemic
riverweed darter	*Etheostoma podostemone*	G4
wounded darter	*Etheostoma vulneratum*	G3/S2S3
scarce swamp skipper	*Euphyes dukesi*	G3/S2
American peregrine falcon	*Falco peregrinus anatum*	State threatened, DM
Appalachian springsnail	*Fontigens bottimeri*	G2/S1S2/SE
Tennessee pigtoe	*Fusconaia barnesiana*	G2G3/S2S3
shiny pigtoe	*Fusconaia cor*	G1/S1
fine-rayed pigtoe	*Fusconaia cuneolus*	G1/S1
finerayed pigtoe	*Fusconaia cuneolus*	G1/S1
Atlantic pigtoe	*Fusconaia masoni*	G2/S2
agueweed	*Gentianella quinquefolia spp occidentalis*	G5T4T5/S1
wood turtle	*Glyptemys insculpta*	G4/S2
American bald eagle	*Haliaeetus leucocephalus*	G5/S2S3
cracking pearlymussel	*Hemistena lata*	G1/S1
fox-tail barley	*Hordeum Jubatum*	G1/S1
canada bluets	*Houstonia canadensis*	G4G5
Roanoke hogsucker	*Hypentelium roanokense*	G5
mountain brook lamprey	*Ichthyomyzon greeleyi*	G3,G4/S2
spiny riversnail	*Io fluvialis*	G2/S2

Common Name / Community	***Scientific Name***	**Federal/State Rankings**
small whorled pogonia	*Isotria medeoloides*	G2/S2
least bittern	*Ixobrychus exilis*	G5/S2
jointed rush	*Juncus articulatus*	G5/S2
small-headed rush	*Juncus Brachycephalus*	G5/S2
narrow-panicled rush	*Juncus* brevicaudatus	G5/S2
big-head rush	*Juncus megacephalus*	G4G5/S2
sheep-laurel	*Kalmia angustifolia*	G5/S3
yellow lampmussel	Lampsilis cariosa	G3G4/S2
eastern lampmussel	*Lampsilis radiata*	G5/S2S3
loggerhead shrike	*Lanius ludovicianus*	G4/S2B,S3N
Tennessee heelsplitter	*Lasmigona holstonia*	G3/S1
green floater	*Lasmigona subviridis*	G3/S2
birdwing pearly mussel	*Lemiox rimosus*	G1/S1
Kemp's Ridley sea turtle	*Lepidochelys kempii*	Endangered
fragile papershell	*Leptodea fragilis*	G5/S1
onyx rocksnail	*Leptoxis praerosa*	G5/S1,S3
slabside pearlmussel	*Lexingtonia dolabelloides*	G2/S2
Virginia pigtoe	*Lexingtonia subplana*	G1/S1
black sandshell	*Ligumia recta*	G5/S2
Carolina lilaepsis	*Lilaeopsis carolinensis*	G3/S1,S2
Swainson's warbler	*Limnothlypis swainsonii*	G4/S2B,S3N
elongated lobelia	*Lobelia elongata*	G4,G5/S1
winged seedbox	*Ludwigia alata*	G3G4/S1
river redhorse	*Moxostoma carinatum*	G4/S2S3
eastern small-footed myotis	*Myotis leibii*	G3/S1
popeye shiner	*Notropis ariommus*	G3/S2S3
emerald shiner	*Notropis atherinoides*	G5/S1S2
roughhead shiner	*Notropis semperasper*	James River endemic
mirror shiner	*Notropis spectrunculus*	G4/S2
yellowfin madtom	*Noturus flavipinnis*	G1/S1
stonecat	*Noturus flavus*	G5/S2
orangefin madtom	*Noturus gilberti*	G2
eastern glass lizard	*Ophisaurus ventralis*	G5/S1
large-leaved grass of Parnassus	*Parnassia grandifolia*	G3G4/S2
joint paspalum	*Paspalum distichum*	G5/S1
blotchside logperch	*Percina burtoni*	G2G3/S1
channel darter	*Percina copelandi*	G4/S2
longhead darter	*Percina macrocephala*	G3/S1S2
stripeback darter	*Percina notogramma*	James River endemic
Roanoke logperch	*Percina rex*	G1, G2, LE
caddisfly	*Phylocentropus carolinus*	G5
slender-leaved dragon-head	*Physostegia leptophylla*	G4G5/S2
Peaks of Otter salamander	*Plethodon hubrichti*	G2/S2
James River spiny mussel	*Pleurobema collina*	G1
Tennessee clubshell	*Pleurobema oviforme*	G2G3/S2S3
pyramid pigtoe	*Pleurobema rubrum*	G2G3/S1
a bluegrass	*Poa saltuensis*	G5/S2

Common Name / Community	***Scientific Name***	**Federal/State Rankings**
rare skipper	*Problema bulenta*	G2G3/S1 SOC
thin-necked cave beetle	*Pseudanophthalmus parvicollis*	G1S1
fluted kidneyshell	*Ptychobranchus subtentum*	G2/S2
rough rabbits foot	*Quadrula cylindrica*	G3T2/S2
Appalachian monkeyface	*Quadrula sparsa*	G1/S1
goldencrowned kinglet	*Regulus satrapa*	G5/S2B,S5N
alderleaf buckthorn	*Rhamnus alnifolia*	G5/S1
lance-leaved buckthorn	*Rhamnus lanceolata var. glabrata*	G5T4T5/S1
capillary beakrush	*Rhynchospora capillacea*	G5/S1S2
sauger	*Sander canadensis*	G5
bigeye jumprock	*Scartomyzon ariommus*	G4
purple oat-grass	*Schizachne purpurascens*	G5S1
hard-stemmed bulrush	*Scirpus acutus*	G5/S1
whorled nutrush	*Scleria verticillata*	G5/S2
elliott sida	Sida elliottii	G4G5
redbreasted nuthatch	*Sitta canadensis*	G5/S2B,S4N
roundleaf clover	*Solidago patula*	G5/S1
Dismal Swamp southeastern shrew	*Sorex longirostris fisheri*	G5T2/S2
yellow-bellied sapsucker	*Sphyrapicus varius*	G5/S1B,S4N
sweetscent ladies'-tresses	*Spiranthes odorata*	G5/S3
great plains ladies' tresses	*Spiranthes magnicamporum*	G4/S1
Caspian tern	*Sterna caspia*	G5/S1B,S2N
silky camellia	*Stewarthia malachodendron*	G4/S2
Bigger's Cave amphipod	*Stygobromus biggersi*	G2G4/S1S2
Shenandoah Valley cave amphipod	*Stygobromus gracilipes*	G3G4/S2S3
barrens silky aster	*Symphotrychum pratense*	GNR/S1
Bewick's wren	*Thryomanes bewickii*	G5T2Q/S1B
Spanish moss	*Tillandsia usneoides*	G5/S1
purple lilliput	*Toxolasma lividus*	G2/S1
Fraser's marsh St. John's-wort	*Triadenum fraseri*	G5/S1
least trillium	*Trillium pusillum var. virginianum*	G3T3/S2
winter wren	*Troglodytes troglodytes*	G5/S2B,S4N
American black bears	*Ursus americanus*	Threatened
large cranberry	*Vaccinium macrocarpon*	G4/S2
purple bean	*Villosa perpurpurea*	G1/S1
prostrate blue violet	*Viola walteri*	G4G5/S2
loblolly pine savanna natural community		
non-riverine saturated forest community		
Appalachian terrestrial dung community		
Appalachian cave drip pool/epikarstic community		
Appalachian cave stream community		
oligotrophic saturated scrub community		
Atlantic white cedar swamp community		
brackish marsh community		
pocosin community		
high elevation cove forest		
Terrestrial Community mountain/piedmont acidic seepage swamp		

As one of the largest international conservation organizations, the Conservancy is recognized for its expertise in land protection. Because of this, many land owners are often willing to either donate an easement on their entire property or sell the land or easement below fair market value. The savings in acquisition and protection costs allow the Fund to leverage mitigation payments to fund additional conservation projects, as approved by the agencies.

Although the program does not fund academic research, many of the project sites are available for scientific studies provided there is no interference with the mitigation efforts. Virginia Tech conducted research on the effects of vegetation cover types on soil temperature in relation to growing season at a southeast Virginia site. Old Dominion University conducted a small mammal study at three project sites in the Chowan River Basin. Christopher Newport University utilized monitoring data to generate papers and presentations on numerous restoration-related subjects, including the effect of volunteer colonization by woody species on growth and survival of planted species, the role of site selection and goal setting in restoration of prior converted wetlands, the creation of a GIS-based predictive model for colonization of woody species in restored and created wetlands, and a comparison of the use of a prevalence index and the 50/20 Rule for hydrophytic vegetation community monitoring, including the effect of graminoid species on monitoring outcomes. Virginia Commonwealth University is conducting extensive research on a variety of parameters related to restoration activities undertaken at a stream and wetland restoration site adjacent to the James River.

Project sites have also been used as training opportunities for a number of federal and state government programs. The Conservancy has organized field trips for interested federal, state, and local government representatives, private landowners and home owner organizations, watershed protection groups, school groups, youth service programs, and non-profit organizations. These trips have provided significant educational opportunities for both conservation and stream and wetland mitigation activities. For example, the Conservancy has led field trips to the Rivanna River (Lamb - MJ-1) project as part of the 2005 Virginia Stream Alliance Workshop, as well as individual site visits with local government representatives, local landowners, youth service organizations, and school groups. In addition, several wetland sites in the Chesapeake Bay and Lower James River basins have been used since 2008 as part of a wetland hydrology reference study by the Army Corps of Engineers.

The Conservancy has enlisted the help of numerous volunteers to assist the program-funded staff in accomplishing activities both in the field and in the office. The volunteers have assisted program staff by reviewing and updating various program tracking records, conducting invasive species control activities, planting riparian buffers, assisting with preserve cleanup, and providing visual monitoring of the sites. This involvement furthers the public's understanding of mitigation and the importance of healthy streams and wetlands.

V. Mitigation Projects

This section provides general information regarding the mitigation projects proposed by the Conservancy and approved or denied by the Corps. Detailed project summaries of the approved projects are included in Attachment C.

Approved Mitigation Projects

From 1995 through 2010, the Corps has authorized $39,666,500 for the Conservancy and our partners to pursue a total of 112 mitigation projects. These projects attempt to achieve the overall programmatic goal of water quality improvement through the creation, restoration, and enhancement of non-tidal and tidal wetlands and through the restoration and enhancement of stream channels. Water quality is further enhanced through the restoration or enhancement of the surrounding upland buffers. The Fund has also achieved the preservation of highly functional wetlands, streams, and buffer areas which improve and protect water quality in the long-term. In addition to funding the direct costs of wetland and stream restoration, enhancement, creation, or preservation, money was also requested and authorized to fund a variety of associated or preliminary activities including land acquisition, property appraisals, boundary surveys, stewardship activities, feasibility studies, and conceptual plan development.

A summary table listing all of the projects for which funds have been authorized through 2010 is included in Attachment A. The table includes the project name and corresponding identification number (based on major river basin), project location information (HUC), aquatic resource type for which the project provides mitigation (non-tidal wetlands, tidal wetlands, streams), proposal information (purpose of the request for funding, date proposed by the Conservancy, date the funds were authorized by the Corps), and the amount of funds authorized by the Corps based on resource type. The projects are organized by major river basin, and within each basin, listed chronologically based on the Corps funding approval date. Several project names are withheld as a privacy consideration for landowners whose protection instrument has not been finalized at this time. These projects are identified throughout the report according to the project identification number and the general location or watershed of the project.

Due to drainage divides or hydrological modifications at the site, four projects (CB-5/CH-12, CB-8/YK-4, CH-9/LJ-4, and SH-3/UJ-3) mitigate for impacts within multiple basins. Although these projects are listed in the table in Attachment A under both basins, the total funds authorized by the Corps for these projects have been appropriately divided between the two respective basins.

Table 35 illustrates the number of mitigation projects approved by the Corps each year since the initiation of the Fund. Only the initial project approval is included in the table. Subsequent approvals for the same project are not recorded as approved projects in the subsequent year.

As stated in the original MOU, the Conservancy initially proposed projects located primarily along the North Landing River and Northwest River within the Chowan River basin. As the geographic range and amount of mitigation payments received by the Fund increased, the need for compensatory mitigation projects in additional areas became necessary. The Conservancy has proposed a diversity of projects across the state in all major river basins with the exception of the New River basin and the Big Sandy River basin. Many of the proposed projects across the state include both wetland and stream components and a suite of creation, restoration, enhancement, and preservation activities. A map depicting the location of these sites across the state is included in Attachment B.

Of the 112 approved projects, 70 projects include mitigation activities to address non-tidal wetland impacts; 14 projects include mitigation activities to address tidal wetland impacts; and 58 projects include mitigation activities to address stream impacts. Twenty-eight of the approved projects include mitigation activities to address impacts to multiple aquatic resource types. Of the 112 approved mitigation projects, the Conservancy is actively developing or completing 94 projects. The Conservancy is no longer pursuing the remaining projects due to inability to

proceed with landowners or based on the findings of feasibility studies.

Table 35: Annual Number of Approved Projects		
	Number of Approved Projects	
Year	Number	Cumulative Total
1995	1	1
1996	0	1
1997	4	5
1998	2	7
1999	1	8
2000	3	11
2001	5	16
2002	5	21
2003	5	26
2004	5	31
2005	12	43
2006	22	65
2007	16	81
2008	20	101
2009	7	108
2010	4	112

Table 36 provides an annual summary and cumulative total of funds authorized by the Corps through 2010 based on aquatic resource type. As noted in the table and detailed in Section III, the Fund has shown continued progress in the approval of mitigation projects in 2010.

Table 36: Annual Authorized Funds Per Resource Type					
	Funds Authorized				
Year	Non-Tidal Wetland Projects ($)	Tidal Wetland Projects ($)	Stream Projects ($)	Total ($)	Cumulative Total ($)
1995	37,000	0	0	37,000	**37,000**
1996	0	0	0	0	**37,000**
1997	167,100	10,000	7,000	184,100	**221,100**
1998	340,000	0	0	340,000	**561,100**
1999	143,200	0	0	143,200	**704,300**
2000	521,300	1,700	0	523,000	**1,227,300**
2001	936,700	10,000	15,000	961,700	**2,189,000**
2002	1,250,000	90,700	101,600	1,442,300	**3,631,300**
2003	510,800	40,000	1,545,800	2,096,600	**5,727,900**
2004	1,366,300	25,300	137,600	1,529,200	**7,257,100**
2005	206,900	206,500	474,000	887,400	**8,144,500**
2006	2,522,800	9,000	6,334,300	8,866,100	**17,010,600**
2007	1,130,400	6,300	6,546,100	7,682,800	**24,693,400**
2008	4,322,600	135,400	6,797,500	11,255,500	**35,948,900**
2009	665,800	113,300	812,300	1,591,400	**37,540,300**
2010	1,410,000	45,000	671,500	2,126,500	**39,666,800**
Total	**15,530,900**	**693,200**	**23,442,700**	**39,666,800**	

Table 37 summarizes the funds authorized by the Corps according to resource type and major river basin. All major river basins in Virginia have had funds authorized for mitigation projects except for the Big Sandy and New River basins. Until 2005 the Fund has not been used as a mitigation option in these basins. Those basins with the highest amount of funds authorized have over $3 million each authorized for projects, and include the Lower James River, Middle James River, Potomac River, Rappahannock River, and Shenandoah River basins. Several basins, including the Chesapeake Bay, Chowan River, Tennessee River, Roanoke River and York River basins, have over $1 million authorized towards mitigation projects. Table 38 provides information about the payments from the Fund to complete the mitigation activities approved by the Corps on an annual basis.

Table 37: Authorized Funds Per Resource Type and Basin through 2010

Basin	Funds Authorized			
	Non-Tidal Wetland Projects ($)	Tidal Wetland Projects ($)	Stream Projects ($)	Total ($)
Atlantic Ocean	0	256,400	0	**256,400**
Chesapeake Bay	2,194,800	246,300	171,400	**2,612,500**
Chowan	2,617,700	52,700	171,800	**2,842,200**
Lower James	3,851,100	88,700	2,034,300	**5,974,100**
Middle James	493,200	0	4,842,900	**5,336,100**
Upper James	128,000	0	149,000	**277,000**
Potomac	1,235,800	38,000	8,037,000	**9,310,800**
Rappahannock	1,745,900	10,000	2,576,700	**4,332,600**
Roanoke	261,600	0	801,800	**1,063,400**
Shenandoah	576,100	0	3,387,300	**3,963,400**
Tennessee*	950,000	0	908,600	**1,858,600**
York	1,476,600	1,000	362,000	**1,839,600**
Totals	**15,530,800**	**693,100**	**23,442,800**	**39,666,700**

*Note: Historically, Big Sandy River impacts were included with the Tennessee River basin payments and were approved for use in the Tennessee River basin if necessary. This recognizes the difficulty in identifying projects without severed mineral rights in the Big Sandy River basin. Because of this, the Conservancy closed the Fund for use as a mitigation option in the Big Sandy River watershed.

Table 38: Summary of Yearly Expenditures

Year	Expenditures ($)
1995	0
1996	37,400
1997	173,700
1998	320,600
1999	40,200
2000	824,000
2001	682,000
2002	1,184,800
2003	551,400
2004	1,239,900
2005	1,110,700
2006	2,615,700
2007	5,991,700
2008	5,939,900
2009	4,717,000
2010	2,353,200
Total	**27,782,200**

These approved projects are in various stages of completion (Table 39). For example, as detailed in Section III, a significant number of projects were approved through 2006 - 2008. Many recently approved projects are pending the closure of land acquisitions or easements, require delineations or surface water assessments, or are in various planning stages for restoration or enhancement activities. Therefore, acreages, linear footages and funding values included in this report are often estimates and may require adjustments in future reports. Once a project is officially closed, the Conservancy will report the final mitigation provided by that project and the total funds authorized for that project in the subsequent annual report.

Table 39: Status of Approved Projects					
Project Status	**Non-Tidal Wetland**	**Tidal Wetland**	**Stream**	**Multiple Resource**	**Total Number**
Active Project Development	2	0	3	4	9
Acquired/Protected	4	1	2	4	11
Construction Planned 2010	7	0	9	0	16
Constructed/Monitoring	12	3	4	6	25
Closed/Mitigation	15	3	9	7	34
Closed without Mitigation	5	0	7	3	15
Inactive, pending closure	0	0	1	1	2
Total	**45**	**7**	**35**	**25**	**112**
Active Project Development - currently in negotiations with landowner and/or developing restoration plans					
Acquired/Protected - preservation only projects with land protection deal completed; delineation required to close					
Construction Planned 2011 - restoration plans complete or underway for 2011 implementation of mitigation activities					
Constructed/Monitoring - restoration activities are complete, project in monitoring phase (up to 10 years)					
Closed/Mitigation - project has been officially closed and mitigation credit assigned					
Closed w/o Mitigation - project has been officially closed and did not provide any mitigation credit (appraisal, feasibility, project withdrawn)					
Inactive, pending closure - project is no longer moving forward and will be closed w/o credit					

Approved Project Details

Non-Tidal Wetland Summary

Tables 40, 41 and 42 provide summary information of Fund activity relating to non-tidal wetlands from 1995 through 2010. Table 40 details the total impacts (acres), mitigation payments, authorized funds, the remaining balance of available funds, and the mitigation liability (credits). Table 41 summarizes the mitigation activities being pursued (acres), and the proposed credits for non-tidal wetlands on a programmatic basis. Table 42 provides a summary of the non-tidal wetland impacts (acres), the credit liability, the proposed wetland mitigation credits, the mitigation acres, and additional protected acres for each major river basin.

Table 40: Non-Tidal Wetland Impact and Financial Summary				
Impacts (ac)	**Mitigation Payments ($)**	**Authorized Funds ($)**	**Remaining Balance ($)**	**Mitigation Liability (credits)**
246.70	20,999,100.00	15,530,900.00	5,468,200.00	441.7

Table 41: Non-Tidal Wetland Mitigation Activity Summary						
Non-Tidal Wetland Mitigation Activities (ac)					**Sum of Mitigation (ac)**	**Sum of Mitigation Credits**
Wetland Restoration	**Wetland Enhancement**	**Wetlands Preservation**	**Upland Restoration**	**Upland Preservation**		
485	24	4,027	336	1,321	6,193	969

Table 42: Non-Tidal Mitigation Summary Based on Major River Basin							
Basin	**Impact (ac)**	**Mitigation Liability (credits)**	**Proposed Mitigation (credits)**	**Mitigation Successful or Construction (credits)**	**Credit Balance (Credits)**	**Proposed Mitigation (ac)**	**Additional Protected Acreage**
Atlantic Ocean	1.28	2.1	0	0	-2.1	0	0
Big Sandy	0.11	0.15	0	0	-0.15	0	0
Chesapeake Bay	46.62	88.28	160.56	117.27	72.28	1453	630
Chowan River	41.71	76.47	312.7	267.3	236.23	1726	11
Lower James River	70.34	132.69	260.6	212	127.91	1325	794
Middle James River	20.45	37.4	28.12	28.12	-9.28	160	499
Upper James River	3.31	5.29	4.2	4.2	-1.09	14	0
New River	1.62	1.67	0	0	-1.67	0	0
Potomac River	8.78	13.64	79.51	79.51	65.87	812	0
Rappahannock River	10.21	19.28	52	27	32.72	168	301
Roanoke River	5.65	9.6	5.12	0	-4.48	14	0
Shenandoah River	9.08	11.35	11.7	1.1	0.35	29	0
Tennessee River	18.47	26.52	25.71	1.44	-0.81	61	0
York River	9.07	17.24	37.31	37.31	20.07	431	186
Total	**246.70**	**441.68**	**977.53**	**775.25**	**535.85**	**6193**	**2421**

Tidal Wetland Summary

Tables 43, 44 and 45 provide summary information of Fund activity relating to tidal wetlands from 1995 through 2010. Table 43 contains the total impacts (acres), mitigation payments, authorized funds, the remaining balance of available funds, and the mitigation liability (credits). Table 44 details the mitigation activities being pursued (acres), and the proposed credits for tidal wetlands on a programmatic basis. Table 45 provides a summary of the tidal wetland impacts (acres), the credit liability, the proposed wetland mitigation credits, the mitigation acres, and additional protected acres for each major river basin.

Table 43: Tidal Wetland Impact and Financial Summary				
Impact (ac)	**Mitigation Payments ($)**	**Authorized Funds ($)**	**Remaining Balance ($)**	**Mitigation Liability (credits)**
2.63	635,800	692,700	-56,900	2.63

Table 44: Tidal Wetland Mitigation Activity Summary						
Tidal Wetland Mitigation Activities (ac)					**Sum of Mitigation (ac)**	**Sum of Mitigation (credits)**
Wetland Restoration	**SAV Restoration**	**Oyster Restoration**	**Tidal Enhancement**	**Tidal Preservation**		
28.8	20	3.34	220	316	564	68.7

Table 45: Tidal Mitigation Activity Summary Based on Major River Basin						
Basin	**Impact (ac)**	**Mitigation Liability (credits)**	**Proposed Mitigation (credits)**	**Mitigation Successful or Construction (credits)**	**Credit Balance (credits)**	**Proposed Mitigation (ac)**
Atlantic Ocean	1.01	1.01	4.6	4.6	3.59	23
Chesapeake Bay	1.07	1.07	32.38	14.98	31.31	244
Chowan River	0.01	0.01	1.4	1.4	1.39	70
Lower James River	0.43	0.43	16.1	16.1	15.67	27
Potomac River	0.11	0.11	9.71	9.71	9.6	117
Rappahannock River	0	0	1.6	1.6	1.6	80
York River	0	0	2.96	2.96	2.96	2.96
Total	**2.63**	**2.63**	**68.75**	**51.35**	**66.12**	**563.96**

Stream Summary

Tables 46, 47, 48 and 49 provide summary information of the Fund activities for streams from 1995 through 2010. Table 46 provides a summary of the total linear feet of impacts and associated financial information for streams program wide. Table 47 summarizes the total linear footage of each mitigation activity the Fund is pursuing through the approved projects program wide, with pre-USM activities specified. For a broad overview of the Fund activity, stream mitigation activities are divided into the following four general categories: channel restoration / enhancement (projects may include riparian buffer planting); riparian buffer planting (projects do not have any channel or bank work); livestock exclusion; and stream and/or riparian buffer preservation. Table 49 summarizes the total program-wide impact length, linear footage of each mitigation activity, total channel length in the mitigation area, stream mitigation acreage, and the additional protected acreage for the approved stream projects for each major river basin.

As noted in both Tables 48 and 49, for several projects, multiple mitigation activities are completed along the same channel length. For example, riparian buffer planting and livestock exclusion activities were conducted along the same 2,000 linear foot length of stream channel for the Linden Farm project (RP-2). Tables 48 details mitigation activities funded by revenues accrued under the Unified Stream Methodology. Only the Rappahannock River, Roanoke, Middle James River, Tennessee River and Shenandoah River basins have projects funded through USM revenues through 2010. Detailed descriptions of the mitigation activities (with associated buffer widths, as appropriate) for each project are included in the project summaries in Attachment C.

Table 46: Stream Impact and Financial Summary				
Type	**Impact (lf)**	**Mitigation Payments ($)**	**Authorized Funds ($)**	**Remaining Balance ($)**
Pre-USM	167,700	25,313,000	22,649,000	2,664,000
USM	20,100	8,144,100	793,600	7,350,500
Total	**187,800**	**33,457,100**	**23,442,600**	**10,014,500**

Table 47: Stream Mitigation Activity Summary					
	Stream Mitigation Activity (lf)				
Type	Channel Restoration / Enhancement (may include buffer planting)	Riparian Buffer Planting (no channel or bank work)	Livestock Exclusion	Stream and/or Riparian Buffer Preservation	Total Channel Length in Mitigation Area (lf)
Pre-USM	47,863	15,680	23,799	618,146	686,051
USM	1,492	1,903	0	48,631	51,816
Total	**49,355**	**17,583**	**23,799**	**666,777**	**737,867**

For several projects, multiple mitigation activities are completed along the same channel length (e.g. Riparian Buffer Planting and Livestock Exclusion)

Table 48: USM Compensation Credit Summary Based on Major River Basin						
Basin	Impact (lf)	TCR	Proposed Compensation Credit	Total Channel Length in Mitigation Area (lf)	Stream Mitigation Area (ac)	Additional Protected Acreage
Big Sandy	1,034	1,293	N/A	0	0	0
Chowan River	1,262	1,307	N/A	0	0	0
Lower James River	2,622	3,401	N/A	0	0	0
Middle James River	609	464	N/A	0	0	0
New River	163	163	N/A	0	0	0
Potomac River	3,671	3,199	N/A	0	0	0
Rappahannock River	5,091	5,256	7,815	43,459	196	0
Roanoke River	2,927	2,455	1,614	4,829	180	45
Shenandoah River	2,669	2,387	1,339	2,381	14	10
Tennessee River	27	19	153	727	6	0
York River	7	9	N/A	0	0	0
Total	**20,082**	**19,953**	**10,921**	**51,396**	**396**	**55**

Table 49: Stream Mitigation Activity Summary Based on Major River Basin

Basin	Impact (lf)	Proposed Stream Mitigation Activity (lf)				Total Channel Length in Mitigation Area (lf)	Total Completed Mitigation	Stream Mitigation Area (ac)	Additional Protected Acreage (ac)
		Channel Restoration / Enhancement (may include buffer planting)	Riparian Buffer Planting (no channel or bank work)	Livestock Exclusion	Stream and/or Riparian Buffer Preservation				
Atlantic Ocean	0	0	0	0	0	0	0	0	0
Big Sandy	3,006	0	0	0	0	0	0	0	0
Chesapeake Bay	1,399	0	0	0	41,872	41,872	19,372	118	NTW
Chowan River	2,173	0	0	0	16,350	16,350	6,460	85	277.5
Lower James River	22,983	8,104	0	0	15,541	23,645	11,054	119	NTW
Middle James River	33,288	14,791	6,000	0	42,187	60,478	51,426	587	59
Upper James River	0	0	0	0	7,609	7,609	7,609	104	0
New River	3,241	0	0	0	0	0	0	0	0
Potomac River	76,813	17,055	0	8,477	110,342	127,947	119,085	607	1,560
Rappahannock River	15,862	0	2,000	7,742	308,197	315,939	312,039	1,314	2,979
Roanoke River	7,562	3,215	800	0	20,708	23,923	6,008	172	420
Shenandoah River	14,797	4,103	1,700	0	33,742	39,545	38,026	526	1,180
Tennessee River	5,359	1,580	1,580	7,580	51,451	53,031	10,781	397	1470
York River	1,289	2,200	3,600	0	21,728	27,528	978	231	133
Total	187,772	51,048	15,680	23,799	669,727	737,867	582,838	4,260	8,078

Linear footages and acreages included in this table include estimates which may be changed in future reports, as the projects are in various phases of completion.
Mitigation Area refers to linear footage and/or acreage included under a "no-touch" buffer

lf - linear feet | ac - acre

NTW - Additional Protected Acreage reported in non-tidal wetland summary

1 - For several projects, multiple mitigation activities are completed along the same channel length (e.g. Riparian Buffer Planting and Livestock Exclusion)

2 - The Rappahannock River Fish Passage project not included in table

Additional Protected Acreage refers to acreage included under the protective instrument placed on the property by the program which does not qualify for mitigation due to specified allowable activities (e.g. silviculture, agriculture)

Closed Projects

In 2010, the Conservancy and the Corps closed one project. This project was closed because negotiations were not completed and does not provide mitigation. A total of 49 projects have been closed through 2010.

Table 50 identifies the closed projects, funds allocated, funds returned upon closure, and purpose of the project. The amount of credits assigned for each project is detailed in the individual project summary, where applicable, in the following sections.

Table 50: Closed Project Summary through 2010

Project ID	Amount Approved ($)	Balance Returned ($)	Purpose of Project
CB-2	4,700	-900	Mitigation
CB-3	208,200	143,700	Mitigation
CB-4	87,600	66,100	Mitigation
CB-5/CH-12	105,300	19,000	Mitigation
CB-6	95,100	55,700	Mitigation
CB-7	12,000	3,400	Mitigation
CB-9	6,800	0	Feasibility
CB-12	12,700	12,500	Acquisition
CB-13	358,500	158,600	Mitigation
CB-14	5,000	2,500	Appraisal
CH-14	77,200	77,200	Acquisition
CH-2	24,300	0	Mitigation
CH-3	42,000	300	Mitigation
CH-4	8,800	0	Mitigation
CH-5	337,600	3,100	Mitigation
LJ-2	15,000	0	Mitigation
LJ-3	50,700	0	Mitigation
LJ-5	2,500	1,000	Appraisal
LJ-6	149,500	93,000	Mitigation
LJ-8	49,800	6,500	Mitigation
LJ-9	319,000	319,000	Mitigation
MJ-2	1,500	0	Appraisal
MJ-3	253,500	20,800	Mitigation
MJ-4	12,600	500	Mitigation
MJ-9	40,800	40,800	Acquisition
PO-4	8,000	0	Appraisal
PO-6	3,100,000	0	Mitigation
PO-7	1,400,000	1,000	Mitigation
RO-1	180,000	174,300	Mitigation
RO-2	23,300	20,400	Mitigation
RP-1	10,000	0	Mitigation
RP-2	61,900	7,000	Mitigation

Project ID	Amount Approved ($)	Balance Returned ($)	Purpose of Project
RP-3	39,700	0	Mitigation
RP-6	6,500	3,500	Appraisal
RP-7	114,800	114,800	Acquisition
RP-8	123,300	0	Mitigation
RP-9	81,000	3,000	Mitigation
RP-10	75,500	300	Mitigation
RP-12	150,000	0	Mitigation
SH-3/UJ-3	1,034,700	6,600	Mitigation
TN-1	7,000	-500	Mitigation
TN-3	39,000	1,400	Mitigation
TN-4	6,000	0	Appraisal
UJ-2	149,000	149,000	Mitigation
YK-10	17,600	100	Mitigation
YK-3	87,600	66,100	Mitigation
YK-7	22,100	2,900	Mitigation
YK-8	232,500	232,500	Acquisition
YK-9	14,100	14,100	Acquisition
Total	**9,264,300**	**1,819,300**	

In conclusion, as intended, the mitigation payments for numerous, small impacts have been collectively pooled to provide large scale, ecologically preferable mitigation. As the available balance of the Fund has grown, the ability of the program to pursue mitigation projects has increased. With the addition of program staff in 2005 and 2008, the number of approved projects and the efficiency of completing those projects have increased. At the close of 2010, approximately two-thirds of the accumulated mitigation payments have been authorized to a diverse array of non-tidal wetland, tidal wetland, and stream mitigation projects across Virginia. These projects provide a suite of typical wetland and stream restoration, enhancement, and preservation opportunities, as well as unique projects aimed at improving water quality and/or providing additional ecological benefits.

A detailed summary of each project for which funds have been authorized is included in Appendix C. The mitigation projects are organized by major river basin.

Future Priorities

The Conservancy has identified future priorities for the Fund, including programmatic goals as well as activities associated with individual projects. Programmatic goals include operational activities such as the continued prioritization of project identification in areas with high mitigation need. Because the individual project status and the required activity for each project is covered in Section V, this section only discusses the general areas of need for projects such as those pending closure or implementation.

- Mitigation Rule Changes: On April 10, 2008, the Corps and the Environmental Protection Agency (EPA) released the final rule on "Compensatory Mitigation for Losses of Aquatic Resources" (Federal Register Vol. 73, No. 70). The final rule issues "regulations governing compensatory mitigation for activities authorized by permits issued by the Department of the Army." These regulations establish equivalent performance standards for all forms of mitigation, including in-lieu programs. The Fund has proposed changes required to adhere to the guidelines set forth in the new rule. These include assigning advance credits, defining the compensation planning framework and watershed approach used by the Fund, establishing pricing for credit sales, and determining credit release for approved projects. The Conservancy has proposed modifications to the operating agreement to accommodate these changes. Developing these plans and implementing them will be a high priority for the Conservancy staff and managers in 2011. The Conservancy anticipates coming into compliance and operating under a new instrument by June 9, 2011.

- Prioritization of efforts to identify and acquire mitigation projects in basins with the greatest compensatory mitigation need is a dynamic process. As indicated in Section V, there are several basins in which there is mitigation need across all aquatic resource types.

  Stream Mitigation Priorities: The majority of stream impacts utilizing the Fund have occurred in the Potomac River Basin. Additional basins with high impacts include the Middle James River, Lower James River, Shenandoah River, and Rappahannock River basins. These five basins account for 88% of the linear footage of impacts through 2010. Appropriately, the Conservancy has focused on these basins to identify and propose stream mitigation projects.

- Implementation of Approved Projects: As reported in earlier sections, the number of projects proposed and approved annually continues to increase. The approved projects include non-tidal wetland, tidal wetland, and stream mitigation projects involving a suite of activities including restoration, enhancement, and preservation at sites across the state. In recent years many projects have been approved which involve restoration and/or enhancement activities that include design, permitting, site construction, contract oversight and supervision activities. Implementation of these activities will continue to be a sizable effort by Conservancy staff in 2011.

- Mitigation Monitoring and Maintenance of Existing Sites: As approved projects are implemented, mitigation monitoring and corrective action on sites becomes a major priority for the Fund to ensure the success of the sites. Most of the restoration projects require monitoring for a period of ten years. In addition, corrective action on some sites is an anticipated and necessary part of mitigation projects. This corrective action could be in the form of invasive species control, supplemental planting to correct low survival of planted vegetation, the maintenance or replacement of engineering structures/practices to increase site hydrology, etc. Managing this workload in a way that ensures the success of the mitigation sites will remain a high priority.

Attachment A. Approved Project Table.
Included as a stand-alone document – filename: *2010 Report - Attachment A..pdf*.

Attachment B. Map of Project Locations within River Basins
Included as a stand-alone document – filename: *2010 Report - Attachment B - [11x17].jpg*

Attachment C. Project Summaries within River Basins
Included as a stand-alone document – filename: *2010 Report – Attachment C..pdf*

Attachment D. Map of Northwest River Conservation Corridor
Included as a stand-alone document – filename: *2010 Report - Attachment D - [8.5x11].jpg.*

Attachment E. Map of Dragon Run Conservation Corridor
Included as a stand-alone document – filename: *2010 Report - Attachment E - [8.5x11].jpg.*